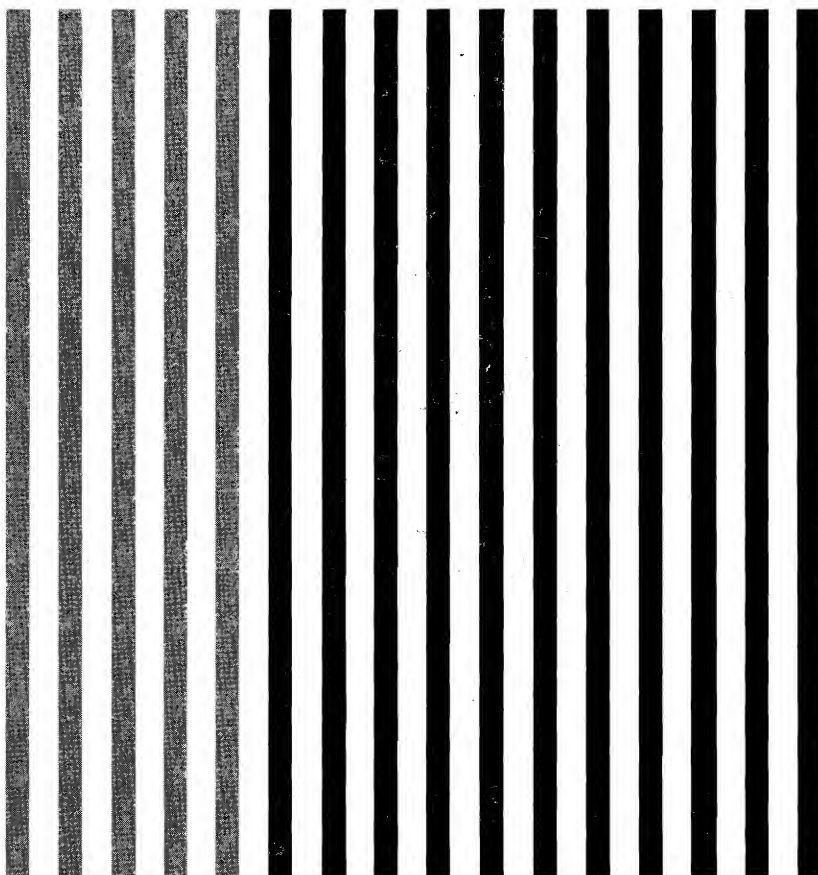


**brother®**

# WORD PROCESSOR **WP-2200**

USER'S  
GUIDE



AMERICAN

# Congratulations!

Thank you for choosing a Brother Word Processor! This machine is designed to deliver years of reliable operation. Please read this manual carefully and keep it in a safe place for future reference. We recommend that you write the model number and the serial number of your machine in the blank space below. These numbers can be found on the rear panel of the machine.

MODEL No.:	SERIAL No.:
------------	-------------

## FCC NOTICE

1. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
  - Reorient or relocate the receiving antenna.
  - Increase the separation between the equipment and receiver.
  - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
  - Consult the dealer or an experienced radio/TV technician for help.
2. Changes or modifications not expressly approved by Brother Industries, Ltd. could void the user's authority to operate the equipment.

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# Preface

## How to Use this Guide

This guide will help you use Word Processing and the other special features provided by the Brother WP-2200.

Chapter 1 of this guide introduces you to the WP-2200. Chapter 2 describes how to set up the machine and install supplies. It describes procedures and characteristics shared by all modes of the machine. Chapters 3 through 7 provide detailed instructions for using each mode and feature. We recommend that you read Chapters 1 and 2, and then go on to read the chapter that describes the feature you want to use.

Chapter 8 describes troubleshooting procedures and includes a list of error messages. Appendices A through E provide useful reference information. The Glossary defines the special terms used in this guide.

## Conventions

This guide uses the following typographic conventions:

**CODE**

This notation indicates a key on the keyboard.

**PRINT** (**P**)

A key followed by a key in parentheses indicates that both markings appear on the keytop.

**CODE** + **PRINT** (**P**)

Two keys joined by a plus sign indicates that you must hold down the first key while pressing the second.

Press RETURN to save.

This typeface indicates a message that appears on the screen.

# Table of Contents

---

## CHAPTER 1

### Introduction to the Brother

#### WP-2200 ..... 1

## CHAPTER 2

### Before You Begin .....3

#### Precautions .....4

#### Part Names .....5

#### Keyboard Layout .....6

##### Character Keys .....7

##### Keyboard Control Keys .....8

##### Function Keys .....9

#### Setting Up the Machine .....10

##### Unpacking .....10

##### Packing List .....10

##### Setting Up the Keyboard .....11

##### Turning On the Machine .....11

#### Inserting Paper .....12

#### Installing Printing Accessories .....13

##### Changing Ribbons .....13

##### Changing Correction Tapes .....14

##### Changing Daisy Wheels .....15

#### Using Floppy Disks .....17

##### Introduction to Floppy Disks ....17

##### Inserting and Removing a Disk ..17

##### Preparing New Disks .....18

##### Caring for Your Disks .....18

##### Write-Protecting Your Disks ....19

##### Backing Up Your Disks .....19

#### Using Menus .....20

##### Using the MAIN MENU .....20

##### Using Function Menus and

##### Submenus .....20

##### Selecting Menu Items Quickly ..21

##### On-Screen Help Information ....21

#### Understanding Memory .....22

## CHAPTER 3

### Using the Machine as a

#### Typewriter ..... 23

#### Introduction to the Typewriter

##### Mode ..... 24

##### Entering the Typewriter Mode .. 24

##### Inserting Paper ..... 24

##### TYPE Mode and L/L Mode .... 24

##### The Typewriter Mode Screen ... 25

##### Typing Your Text ..... 25

#### Special Key Functions

##### in Typewriter Mode ..... 27

##### The Cursor Keys ..... 27

##### Caps Lock and Shift Lock .... 27

##### Backspace ..... 27

#### Typewriter Settings ..... 29

##### Margin Setting ..... 29

##### Pitch Setting ..... 29

##### Line Spacing ..... 30

#### Making Corrections ..... 31

##### Making Corrections on the

##### Screen ..... 31

##### Making Corrections on Paper .. 31

##### Making Corrections on the

##### Current Line ..... 31

##### Making Corrections on Other

##### Lines ..... 33

#### Formatting Text ..... 34

##### Tabs and Decimal Tabs ..... 34

##### Indenting ..... 35

##### Centering ..... 36

##### Right Margin Flush ..... 37

#### Character Style Options ..... 38

##### Keyboard Setting ..... 38

##### Bold ..... 38

##### Underline ..... 39

##### Expanded Text ..... 40

##### Subscripts and Superscripts ... 41

##### Accents("Dead" Keys) ..... 41

##### Superimposed Characters ..... 41

#### Special Typewriter Tools ..... 42

##### Checking Spelling ..... 42



Using the Thesaurus (Option) . .	43
----------------------------------	----

## CHAPTER 4

### Word Processing . . . . . 44

Introduction to Word Processing . .	45
-------------------------------------	----

Starting Word Processing . . . . .	48
------------------------------------	----

Input/Edit Screen . . . . .	48
-----------------------------	----

Screen Symbols . . . . .	49
--------------------------	----

Creating a Document . . . . .	50
-------------------------------	----

Exiting the Word Processing	
-----------------------------	--

Mode . . . . .	51
----------------	----

Editing Text . . . . .	52
------------------------	----

Moving Through the Document .	52
-------------------------------	----

Inserting Text . . . . .	54
--------------------------	----

Deleting Text . . . . .	54
-------------------------	----

Block Editing . . . . .	55
-------------------------	----

Copying a Block Between	
-------------------------	--

Two Files . . . . .	58
---------------------	----

Searching for Text . . . . .	59
------------------------------	----

Formatting Text . . . . .	63
---------------------------	----

Format Change Symbol . . . . .	63
--------------------------------	----

Margins . . . . .	63
-------------------	----

Tabs and Decimal Tabs . . . . .	64
---------------------------------	----

Indenting . . . . .	66
---------------------	----

Right Margin Flush . . . . .	67
------------------------------	----

Centering . . . . .	68
---------------------	----

Line Spacing . . . . .	69
------------------------	----

Hyphenation . . . . .	70
-----------------------	----

Justification . . . . .	70
-------------------------	----

Page Breaks . . . . .	71
-----------------------	----

Positioning Text on a Page . . . .	71
------------------------------------	----

Paper Size Settings . . . . .	72
-------------------------------	----

Headers and Footers . . . . .	73
-------------------------------	----

Turning Off the Scale . . . . .	74
---------------------------------	----

Page Layout View . . . . .	75
----------------------------	----

Dual-Screen Display . . . . .	76
-------------------------------	----

Character Style Options . . . . .	78
-----------------------------------	----

Bold . . . . .	78
----------------	----

Underline . . . . .	79
---------------------	----

Expanded Text . . . . .	79
-------------------------	----

Superscripts and Subscripts . .	80
---------------------------------	----

Keyboard Setting . . . . .	81
----------------------------	----

Special Characters . . . . .	81
------------------------------	----

Accents("Dead" Keys) . . . . .	81
--------------------------------	----

Superimposed Characters . . . .	82
---------------------------------	----

Pitch Setting . . . . .	82
-------------------------	----

Special Word Processing Tools . . .	83
-------------------------------------	----

Introduction . . . . .	83
------------------------	----

Checking Spelling . . . . .	83
-----------------------------	----

Checking for Redundancy . . . . .	84
-----------------------------------	----

Turning On the Spell Checker . .	84
----------------------------------	----

Checking Existing Text . . . . .	85
----------------------------------	----

Checking Each Word While	
--------------------------	--

Typing . . . . .	87
------------------	----

The User Dictionary . . . . .	87
-------------------------------	----

Checking Punctuation . . . . .	91
--------------------------------	----

Counting Words . . . . .	94
--------------------------	----

Using the Thesaurus (Option) . .	95
----------------------------------	----

Printing Documents . . . . .	99
------------------------------	----

Printing a Page . . . . .	99
---------------------------	----

Printing an Entire Document . . .	99
-----------------------------------	----

Pausing and Resuming Printing .	101
---------------------------------	-----

Double Columns Printing . . . . .	102
-----------------------------------	-----

Stopping the Printer While	
----------------------------	--

Printing . . . . .	103
--------------------	-----

Saving and Retrieving Documents .	105
-----------------------------------	-----

Saving a New Document . . . . .	105
---------------------------------	-----

Saving an Existing Document . .	105
---------------------------------	-----

Entering a File Name . . . . .	106
--------------------------------	-----

Retrieving a Document . . . . .	107
---------------------------------	-----

Automatic Document Protection .	107
---------------------------------	-----

Managing Files . . . . .	108
--------------------------	-----

Copying a File . . . . .	108
--------------------------	-----

Deleting a File . . . . .	109
---------------------------	-----

Renaming a File . . . . .	109
---------------------------	-----

Copying an Entire Disk . . . . .	110
----------------------------------	-----

Deleting All Files . . . . .	111
------------------------------	-----

## CHAPTER 5

### Spreadsheet . . . . . 112

Introduction . . . . .	113
------------------------	-----

What is a Spreadsheet? . . . . .	113
----------------------------------	-----

The Spreadsheet Mode . . . . .	114
--------------------------------	-----

Starting the Spreadsheet Mode . .	115
-----------------------------------	-----

Spreadsheet Input/Edit Screen .	116
---------------------------------	-----

Exiting the Spreadsheet Mode .	119
--------------------------------	-----

Setting Up a Spreadsheet . . . . .	120
------------------------------------	-----

Entering Alphanumeric Data . .	120
--------------------------------	-----

Entering Numeric Data . . . . .	121
---------------------------------	-----

Defining the Format of Numeric	
--------------------------------	--

Data . . . . .	122
----------------	-----

Using Formulas . . . . .	124
--------------------------	-----

Recalculation .....	128
Using Functions .....	128
Functions Available .....	130
Modifying a Spreadsheet .....	133
Absolute and Relative	
Addresses .....	133
Copying One Cell to Other	
Cells .....	133
Copying a Range of Cells .....	134
Moving a Range of Cells .....	135
Numbering a Range of Cells .....	136
Clearing a Range of Cells .....	137
Deleting Rows and Columns .....	138
Inserting Blank Rows and	
Columns .....	139
Adjusting the Column Width .....	140
Freezing and Releasing	
Columns .....	141
Sorting and Selecting Data .....	142
Bold and Underlined Text .....	145
Managing Spreadsheet Files .....	147
Saving a Spreadsheet .....	147
Retrieving a File .....	147
Copying a File .....	148
Deleting a File .....	148
Renaming a File .....	149
Converting a Spreadsheet into a	
Word Processing File .....	149
Deleting All Spreadsheet Files .....	151
Printing a Spreadsheet .....	152
Printing an Entire Spreadsheet .....	152
Printing Part of a Spreadsheet .....	153
Using Templates .....	154
Template Descriptions .....	154
Displaying a Template .....	155
<b>CHAPTER 6</b>	
<b>Framing .....</b>	<b>156</b>
The Framing Mode .....	156
Creating or Editing a Frame .....	156
Saving a Frame File .....	159
Loading a Frame File .....	159
Printing a Frame .....	160
<b>CHAPTER 7</b>	
<b>Disk Utilities .....</b>	<b>162</b>
The Disk Utility Mode .....	162
Viewing All Files on a Disk .....	162
Exiting the Disk Utility Mode .....	163
File Options .....	163
Disk Options .....	163
<b>CHAPTER 8</b>	
<b>Troubleshooting and</b>	
<b>Error Messages .....</b>	<b>165</b>
Troubleshooting .....	166
Error Messages .....	167
<b>Appendices .....</b>	<b>168</b>
APPENDIX A. Specifications .....	168
APPENDIX B. Character Keys .....	169
APPENDIX C. Screen Symbols and	
Indicators .....	171
APPENDIX D. Function and Function	
Menu Quick	
Reference .....	174
APPENDIX E. Compatible	
Accessories .....	181
<b>Glossary .....</b>	<b>183</b>
<b>Index .....</b>	<b>189</b>
<b>Accessory Order Form .....</b>	<b>195</b>
<b>List of Factory Authorized</b>	
<b>Service Depots .....</b>	<b>203</b>

## **Optional Accessories for Your Word Processor**

You may want to consider some of the accessories described below for your word processor. See "Accessory Order Form" for ordering information.

### **Business Letter Template Disk (BL-2)**

– The Business Letter Template disk can help you write business letters quickly and easily. This disk includes 198 sample business letters, reflecting many business situations. You can display the most appropriate letter and then edit it to suit your purposes.

**Thesaurus Disk (THR-2)** – The Thesaurus Disk provides synonyms for the words you have typed.

**Floppy Disks (MFD-60)** – A box of ten 3.5" double sided/double density (2DD) Floppy Disks.



## CHAPTER 1

# Introduction to the Brother WP-2200

---

The Brother WP-2200 is a versatile and easy-to-use word processing system with special capabilities you rarely find on a word processor. The WP-2200 includes the following features:

**Word Processing** — This sophisticated word processor enables you to type, edit, format, save and print documents. It includes helpful tools such as a Spell Checker and Punctuation Alert. A Thesaurus function is also available as an option.

**Typewriter** — You can use the WP-2200 as a correctable electronic typewriter, and easily switch between Typewriter and Word Processing modes.

**Spreadsheet** — The WP-2200 Spreadsheet, similar to many spreadsheet programs available for personal computers, provides an electronic worksheet for your financial and other records. To help you create spreadsheets, templates for the most common spreadsheet tasks are provided. The Spreadsheet is provided on a separate disk.

**Framing** — Use Framing to draw the vertical and horizontal lines used in forms, tables, and charts.

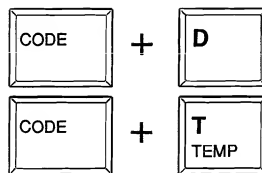
### Integration of Features

The Brother WP-2200 is designed so that its special features can work together. You can, for example,

- Use the Typewriter mode to type text into a form created in Framing mode.
- Include information from a spreadsheet in a Word Processing document.

Refer to the instructions for each mode for more information on how to integrate WP-2200 features.

## Demonstration and Tutorial



To learn more about the features provided by this machine, you can view a demonstration and tutorial on the screen.

- To view the demonstration, press **CODE** + **D** (hold down the **CODE** key and type **D**) from the MAIN MENU.
- To view the tutorial, press **CODE** + **T** (hold down the **CODE** key and type **T**) from the MAIN MENU. The tutorial will provide an introduction to the Word Processing mode.

## Business Letter Template

A Business Letter Template disk is available as an option to help you write business letters. This disk contains sample letters in different categories. Each category of letters is stored in one file. To use a template, you load a file, select the letter which best suits your purpose, and edit or add new text to that letter. You can save your letter in a separate file.

## CHAPTER 2

# Before You Begin

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Precautions.....	4
Part Names .....	5
Keyboard Layout.....	6
Setting Up the Machine .....	10
Inserting Paper .....	12
Installing Printing Accessories .....	13
Using Floppy Disks.....	17
Using Menus.....	20
Understanding Memory .....	22

# Precautions

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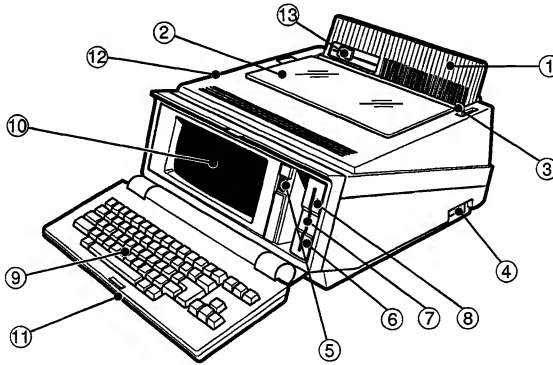
Although this machine is ruggedly constructed, it should not be exposed to extreme conditions. To ensure many years of reliable operation, please observe the following recommendations:

- In case of malfunction, overheating, or other problems, immediately disconnect the AC plug and consult your dealer.
- Do not attempt to disassemble the machine. It has no user-serviceable parts inside.
- Do not touch the inside of a CRT display. Many parts of it are designed to operate from higher voltage. Consult your dealer when it is necessary to disassemble the machine.
- Do not tug on the power cord. To disconnect, be sure to always grasp the plug itself.
- Avoid dropping the machine.
- Avoid direct exposure to sunlight and other sources of heat.
- Avoid spills. If any liquid enters the machine, immediately disconnect the AC plug and consult your dealer.
- Avoid locations subject to excessive moisture or dust.
- Do not use sprays in the vicinity of the machine. Aerosols are extremely harmful to the disk drive.
- Disconnect the AC plug during thunderstorms.
- Do not place heavy objects on the keyboard.
- Always keep the air vents free to ensure proper heat dissipation.
- Clean with a soft, dry cloth. Avoid using chemicals, solvents and detergents.
- To avoid interference, do not place the machine too close to a radio receiver or television. If the machine is too close to a television set, the disk drive may not work properly.
- If you switch the machine off, wait at least 10 seconds before switching it on again. Failure to respect this delay may disrupt the start-up sequence, resulting in faulty operation and possible hardware damage.



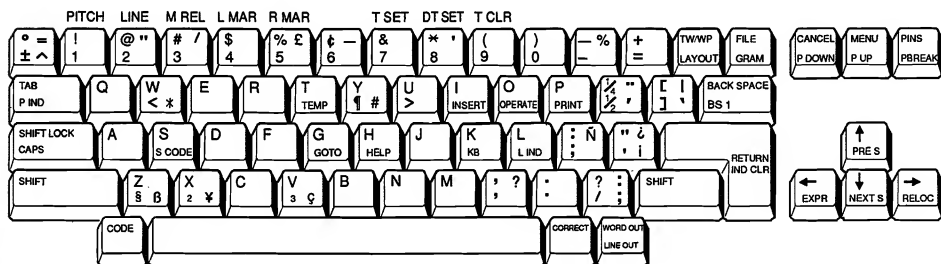
## Part Names

---



- ① Paper Support (Power Cord Cover)  
Supports paper for insertion
- ② Top Cover  
Suppresses printing sounds and protects the printing carriage
- ③ Paper Release Lever  
Unlocks the platen for paper positioning
- ④ Power Switch  
Turns the machine on and off
- ⑤ Brightness Controller  
Controls the display brightness
- ⑥ Access Indicator  
Lights up while the disk is being accessed
- ⑦ Floppy Disk Drive  
Holds floppy disk; saves and retrieves files.
- ⑧ Eject Button  
Ejects floppy disk
- ⑨ Keyboard  
Alphanumeric and function keys
- ⑩ Display  
Displays text
- ⑪ Keyboard Release Button  
Releases and locks the keyboard.
- ⑫ Platen Knob  
Feeds paper manually
- ⑬ Paper Guide  
Adjusts the paper for insertion

# Keyboard Layout

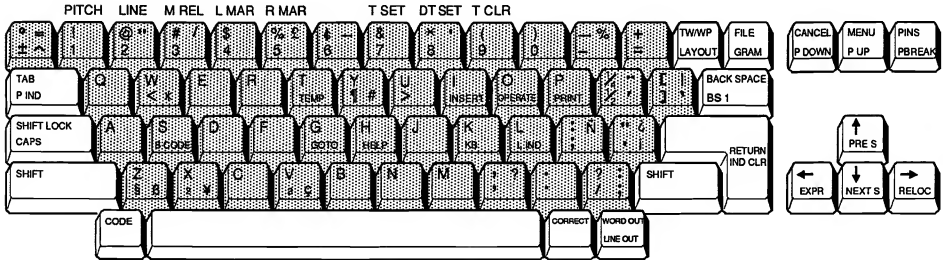


The keyboard of this machine has more keys than a common typewriter. You will also notice that several keytops have words or extra characters printed in green below the standard character. This is because the keys are used both to type text and to access the functions of Word Processing and other modes. You can think of the keys as belonging to one of three categories — Character Keys, Keyboard Control Keys, or Function Keys.

Most keys on the keyboard are "auto-repeat" — if you hold down the key, its effect repeats until you release the key.

## Character Keys

The character keys are used to type actual text. They are similar to the character keys of a standard typewriter. However, because you can use different daisy wheels to print text from the word processor, many non-standard characters are available. To type non-standard characters, you must change from the standard keyboard layout (Keyboard I) to the international (Keyboard II) or symbol (Keyboard III) layout. To print these characters, you must install the appropriate daisy wheel.

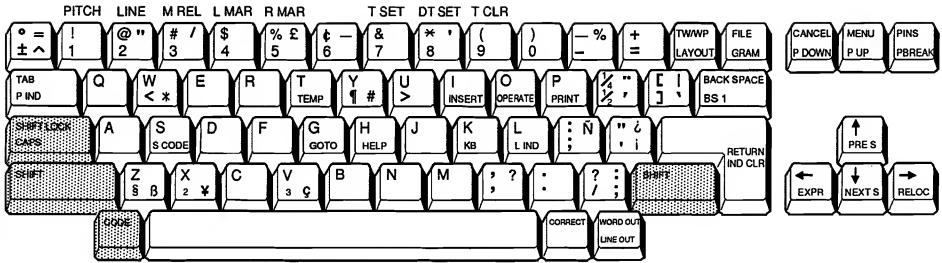


The standard and international characters that each key can produce are printed on the keytops as follows:

- Keyboard I (Standard) — left side of keytop
- Keyboard II (International) — right side of keytop

Characters available from the symbol keyboard (keyboard III) are not shown on the keytops. For more information, see "Character Keys," page 169.

# Keyboard Control Keys



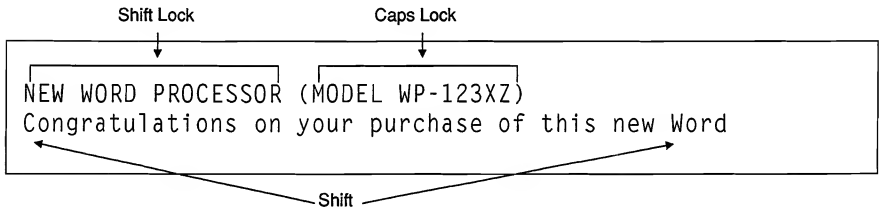
The keyboard control keys — **SHIFT**, **SHIFT LOCK**, and **CODE** — are used to modify the effect of the other keys. These keys produce the following results (the "+" sign indicates that you must hold down the first key while pressing the second key):

**SHIFT** + character key      Produces an uppercase character.

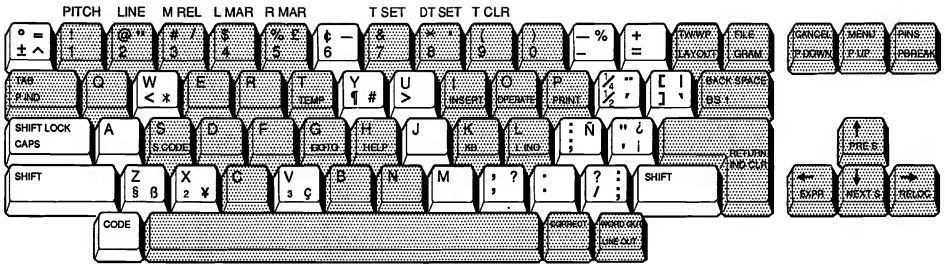
**SHIFT LOCK**      Locks the keyboard in uppercase mode. To return to the normal mode, press **SHIFT**.

**CODE** + **CAPS** (**SHIFT LOCK**)      Locks the keyboard in capital mode, which allows you to combine uppercase letters with numbers. To return to the normal mode, press **CODE** + **CAPS** again.

**CODE** + another key      Produces the character or function printed in green on the keytop, and is used in "short cut" procedures to perform many other functions. (See "Function Keys," page 9.)



## Function Keys



The function keys perform the many functions available in all modes of the machine. Some of these functions are printed in green on the keytops. Others depend upon which mode of the machine you are using. As you can see, many character keys also act as function keys.

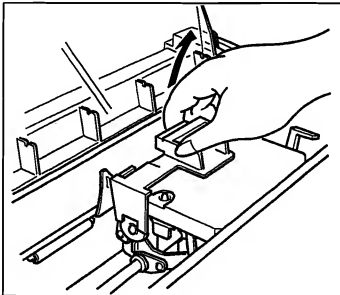
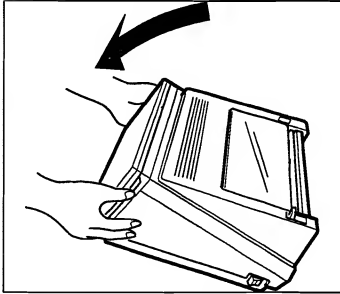
The function keys include those used in the "short cuts" described throughout this manual.

# Setting Up the Machine

## Unpacking

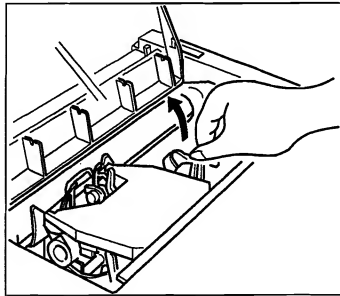
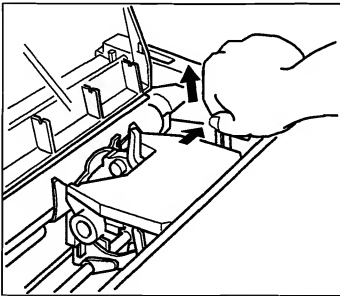
### Caution

Do not use the carrying handle to pull the machine from an upright to a resting position. Return the handle to its original position, and pull the machine down using both hands.



Before you plug in the machine, be sure to remove the yellow plastic pieces, as shown in the illustrations. If you turn on the power before you remove the plastic pieces, you may damage the machine. You do not need to reinstall the plastic pieces unless you are transporting the machine over a great distance.

After removing the packing pieces, close the top cover securely, or the machine will not operate.



## Packing List

Check that all of the following items are included in the box:

1 Word Processor

1 Disk (contains Spreadsheet program, Spreadsheet templates, punctuation function, and an area for data storage)

1 User's Guide

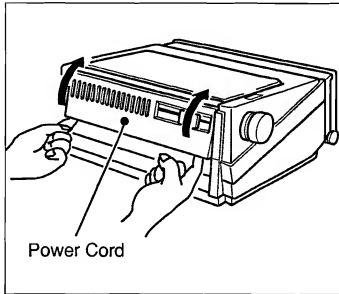
## Setting Up the Keyboard

To set up the keyboard, press the keyboard release button and gently pull the top of the keyboard down. Gently lower the keyboard.

### Note

The keyboard is not detachable.

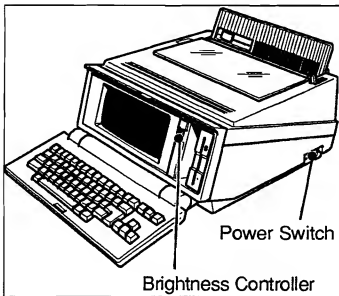
## Turning On the Machine



To turn on the machine:

**Be sure to remove all packing material before turning on the machine.**

1. Lift the paper support, as shown, and remove the power cord. Plug the power cord into an AC outlet.
2. Flip on the power switch, which is located on the right side toward the rear of the machine.
3. If the machine does not respond, check the power cord and then make sure that the top cover is securely latched.
4. After you turn on the machine, adjust the display brightness with the brightness controller next to the screen.



BEFORE YOU BEGIN

# Inserting Paper

BEFORE YOU BEGIN



If you are using the machine as a word processor, you do not need to insert paper until you have finished editing your document and are ready to print. If you are using the machine as a typewriter, you must insert paper before you begin to type.

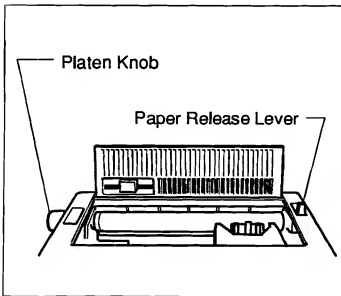
Insert paper as follows:

1. Lift the paper support and adjust the sliding paper guide according to the size of your paper.
2. Insert a sheet of paper flush to the paper guide to ensure that your margin and tab settings have the proper distance from the left edge of the paper.
3. Advance the paper either automatically or manually.

## Automatic Insertion

Press **P INS** to advance the paper to the preset printing position, which is one inch from the top of the paper. You can then adjust the printing position by using **CODE** + **P DOWN** (**CANCEL**) or **CODE** + **P UP** (**MENU**). **CODE** + **P DOWN** reverses the paper one line. **CODE** + **P UP** advances the paper one line.

## Manual Insertion



1. Rotate the platen knob to advance the paper.
2. If the paper is not properly aligned, advance the sheet half way, push the paper release lever toward the rear and manually match the corners of the paper.
3. Pull the paper release lever back to its original position and turn the platen knob until the paper is in the desired position.

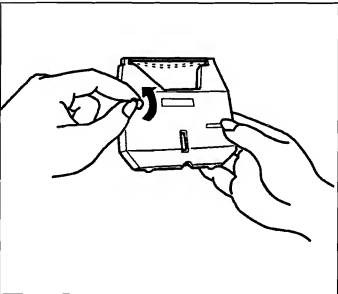
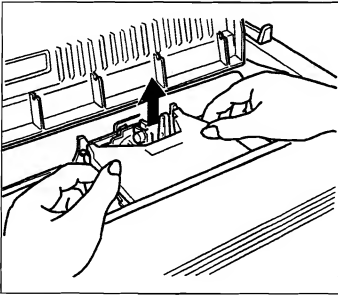


# Installing Printing Accessories

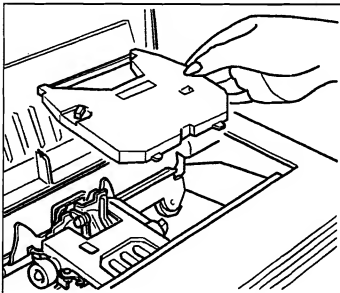
## Changing Ribbons

This machine uses ribbons enclosed in handy cassettes. Three types of ribbons are available, Brother correctable film ribbons (model No.1030), long-lasting Brother nylon ribbons (model No.1032), and Brother multi-strike ribbons (model No.1031).

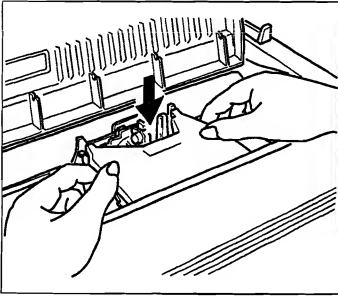
1. Turn on the power and use **TYPEWR** to switch the machine to the Typewriter mode.
2. Use **SPACE BAR** or **BACKSPACE** to move the carriage to the center of the platen and lift the top cover.
3. Grasp the cassette with both hands, raise the front end, and lift out.



4. Turn the feed knob on the left side of the new cassette counterclockwise to take up any slack.



5. Align the arrow on the cassette with the center of the cassette holder, slide the ribbon between the guides, and use both hands to ease the cassette into the holder.



6. Gently press down on the front of the cassette until it clicks into place.
7. Once again, turn the feed knob counterclockwise to take up any slack.
8. Close the top cover.

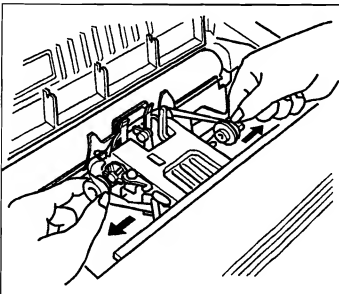
### Notes

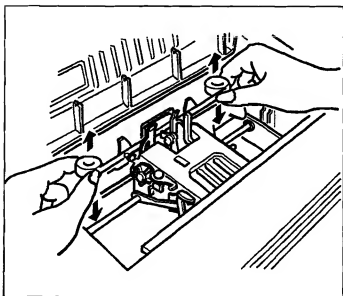
- 1) Use only Brother cassette ribbons.
- 2) It is impossible to move the carriage while the top cover is open. If necessary, close the cover and reposition the carriage.
- 3) You can check the amount of ribbon remaining through the viewing hole on the right side of the cassette.

## Changing Correction Tapes

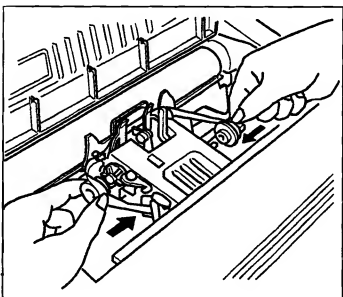
This machine uses correction tape to correct typewriter errors when using the Typewriter mode. Two types of correction tape are available: lift-off correction tape (model No.3010), which is used with correctable film ribbons, and cover-up correction tape (model No.4010), which is used with nylon ribbons and multi-strike ribbons.

1. Turn on the power and press **[W/WP]** to enter Typewriter mode.
2. Use **[SPACE BAR]** or **[BACKSPACE]** to move the carriage to the center of the platen, and then lift the top cover.
3. Remove the cassette ribbon. (See "Changing Ribbons," page 13.)
4. Grasp the spools with your thumbs in the positions shown in the illustration and pull them off their mounts.

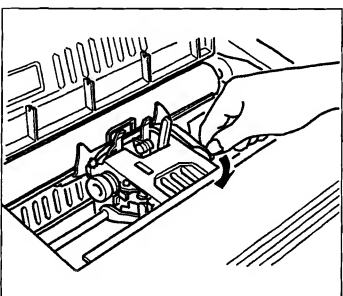




5. Bring the tape back to a position parallel with the platen and then lift it up and out.
6. Pass the new tape through the left guide, behind the ribbon guide, and out through the right guide. The rough side of the tape should face the platen.



7. Mount the feeder spool on the left-hand pin and the take up spool on the right-hand pin.



8. Turn the take-up spool counterclockwise until a small amount of white tape has been wound around it.

9. Replace the cassette ribbon and close the top cover.

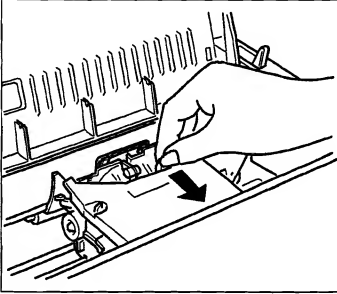
### Notes

- 1) Use only Brother correction tapes.
- 2) It is impossible to move the carriage while the top cover is open. If necessary, close the cover and reposition the carriage.

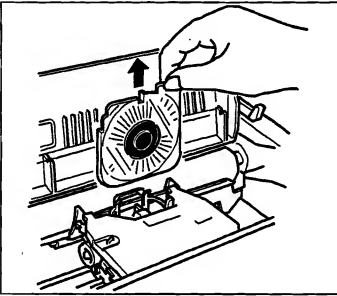
## Changing Daisy Wheels

This machine uses Brother cassette daisy wheels, which are print elements housed in clear plastic cassettes. The cassette ensures that fingers never touch the typeface, thereby reducing the risk of damage. One wheel comes with the machine. Others providing different type sizes, styles, and character sets are also available.

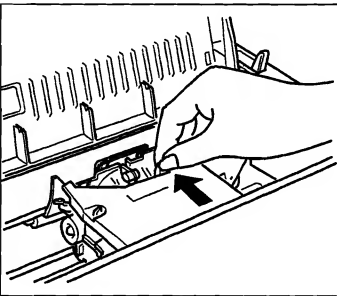
1. Turn on the power and press **TW/WR** to switch the machine to Typewriter mode.
2. Move the carriage to the center of the platen using **SPACE BAR** or **BACKSPACE**.
3. Lift the top cover.
4. Release the daisy wheel by pulling the lever towards you.



5. Remove the cassette by the tab on the top right.
6. Slide the new cassette into the slot.



7. Slide the lever back to its original position to lock the daisy wheel in place with a click.



8. Close the top cover.

### Notes

- 1) Use only Brother cassette daisy wheels.
- 2) Make sure that the cassette is not inserted backwards. (The tab should be on the right.)
- 3) If the cassette is not inserted properly or locked into place, there may be no printout, the printout may be gibberish, or the wheel may break.

# Using Floppy Disks

## Introduction to Floppy Disks

Floppy disks provide a convenient means of saving and retrieving your work. You can use floppy disks to store Word Processing documents, Spreadsheets, and Framing files.

This machine accepts only the following types of 3.5-inch floppy disks:

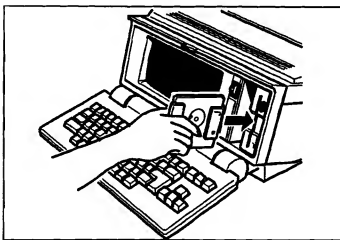
- MF-2DD (Double Sided/Double Density/Double Track)
- MF-1DD (Single Sided/Double Density/Double Track)

This machine cannot use high density ("HD") floppy disks, so remember to purchase only double density, double track ("DD") disks. For best results, we recommended that you use Brother brand disks.

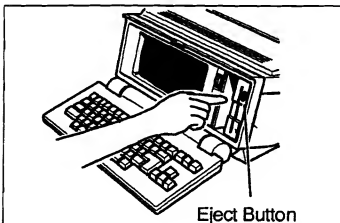
You can store any combination of documents from any of the modes on one disk. When you save a file, the machine adds an "extension" — a period followed by three characters — to files created in all modes except Word Processing. The extension identifies which program created each file. For example, Spreadsheet files end with ".SD2".

When you select a mode from the MAIN MENU, the machine displays a file index containing only those files created from the mode. To display an index of all files on a diskette you use the Disk Utility function. (See "Disk Utilities," page 162.)

## Inserting and Removing a Disk



Insert the floppy disk with the sliding metal shutter entering the disk drive first. (You will feel some resistance if you try to insert the disk incorrectly.) Push the disk into the disk drive until it clicks into place.



To remove the disk, simply press the eject button and pull out.

### CAUTION

Never remove the disk while the disk is being accessed.

## Preparing New Disks

Before you can store information on a disk, the disk must be "formatted."

The disk shipped with your machine has already been formatted and is ready for use.

Formats differ according to the system you are using. This machine uses a proprietary disk format that is not recognized by any other word processor, personal computer, or electronic equipment. However, the machine can recognize and read data from disks that have been used with some other Brother word processors. For more details, please contact your dealer.

When you try to use a disk, the machine checks its format, and can recognize a new disk or one that has been formatted by another system. Unlike most computer systems, you need not format a new disk as a separate procedure. When you insert a disk and try to save a file, the machine checks the format of the disk. If it is unformatted or has a different format, the following prompt appears:

Initialize? Press RETURN(yes) or CANCEL(no).

Press **RETURN** to initialize the disk. Initializing erases and formats the disk.

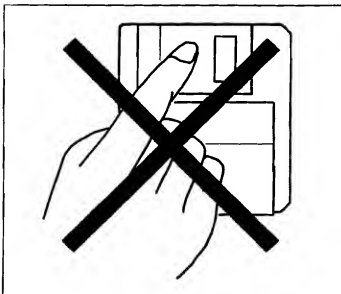
### CAUTION

**Initializing a disk erases any data that might be on it, including files written by another computer system.**

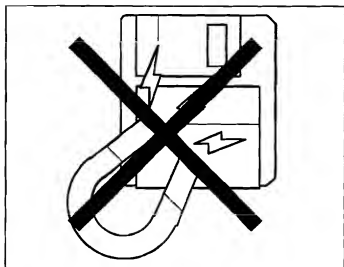
## Caring for Your Disks

The slightest damage to a floppy disk, such as a scratch or small amount of dust, can make the data on the disk unreadable. The protective case of the 3.5-inch floppy disk prevents, to some extent, damage to the sensitive disk surface. (The metal shutter automatically opens and exposes this sensitive surface when the disk is inserted into the drive.)

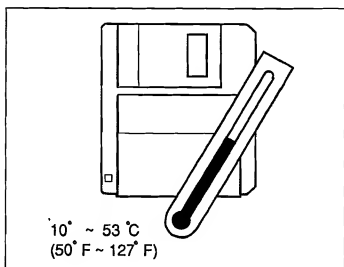
However, the following precautions will help to ensure reliable storage of your files:



Never open the shutter of the disk and never touch the disk surface directly.

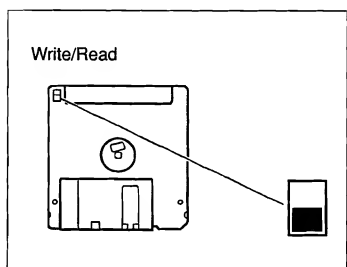


Do not use magnetic materials near the disk.

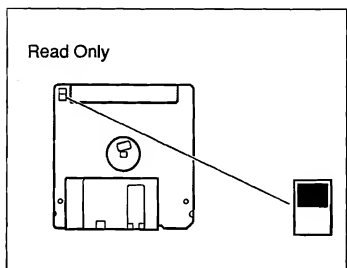


Never expose the disk to extremely high or low temperatures.

## Write-Protecting Your Disks



All 3.5-inch floppy disks have a switch that allows you to protect their contents from accidental erasure. The switch has two positions, Write/Read and Read Only.



When the switch is in Read Only position, you cannot erase old information or store new information on the disk. This is called "write-protecting" a disk. Put the switch in the Read Only position to protect a disk containing valuable information.

## Backing Up Your Disks

The best insurance against losing important data is to make "backup," or duplicate, copies. You can do this in two ways: you can back up one or more individual documents using the Copy function or you can back up an entire disk using the Disk Copy function. For more information about how to use these functions, see "Disk Utilities," page 162.

# Using Menus

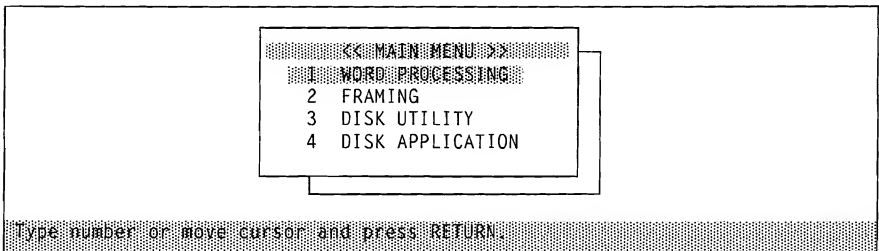
This machine provides a system of menus that help you easily perform most functions without having to memorize many procedures. In general, simply display the appropriate menu, move the cursor to the function you want to perform, and then press **RETURN**.

When you display a menu, the cursor becomes a block. You select a menu item by moving this block-shaped cursor to the item you want. The cursor highlights the area around the item, and the item itself appears in reverse color.

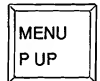
There are three types of menus: the MAIN MENU, function menus, and submenus.

## Using the MAIN MENU

The MAIN MENU is the first menu you see when you turn on the machine. It displays a list of the modes offered by this machine with a number before each mode. To select a mode, move the cursor to the mode you want using **↑**, **↓**, **←**, and **→** and press **RETURN**, or type the number of the mode (without pressing **RETURN**).

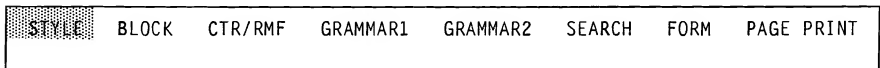


## Using Function Menus and Submenus











Once you have entered one of the modes, you can display a menu of functions offered by that mode by pressing **MENU**. The function menu appears along the top or bottom of the screen.

### Function Menus on Word Processing Input/Edit Screen






To select an item from the function menu, use  and  to move the cursor to the item you want and press  or . Often, another menu "drops down" from the function menu item. This "submenu" offers options related to your function menu choice. You can also display the submenu by pressing . Use  and  to make a selection from the submenu and press .




### Submenus on Word Processing Screen

STYLE	<b>B</b> LOCK	CTR/RMF	GRAMMAR1	GRAMMAR2	SEARCH	FORM	PAGE PRINT
	<b>C</b> OPY						
	<b>D</b> ELETE						
	<b>M</b> OVE						

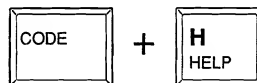
BEFORE YOU BEGIN







## Selecting Menu Items Quickly

When you display a function menu or submenu, you will notice that one character in each menu item appears in bold. This character is called the "accelerator." To select menu items quickly, you can simply type the accelerator instead of moving the cursor and pressing .

In addition, once you have displayed a submenu, you can move from submenu to submenu without pressing , simply by using  and .

## On-Screen Help Information



In any mode of this machine, you can display brief information to help you remember which functions are available and how to perform them using short cut keys. To display help information, press  +  () and follow the instructions that appear on the screen. To return to the original screen, press  +  or .

# Understanding Memory

---

While you are working in Word Processing or in any of the other modes, the machine holds your work in a temporary storage area called the memory. The memory can also store data such as a personal dictionary.

However, when you turn off the power, all data in the memory is lost. For this reason, you must store the data you want to save on a floppy disk.

The memory can hold approximately 32,000 characters. However, under certain circumstances, the machine may not have enough memory to complete a function you have requested.

For example, if you are working on a large document or spreadsheet that nearly fills the memory, and you try to copy a part of the document into another part, there may not be enough memory to hold the additional data. In this case, the message "Memory Full" appears on the screen and your request is cancelled. No damage to the existing data should occur, but you will have to delete a portion of the document to free some memory space, or copy a smaller block.

## CHAPTER 3

# Using the Machine as a Typewriter

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Introduction to the Typewriter Mode.....	24
Special Key Functions in Typewriter Mode.....	27
Typewriter Settings.....	29
Making Corrections.....	31
Formatting Text.....	34
Character Style Options .....	38

# Introduction to the Typewriter Mode

In the Typewriter mode, this machine works like an electronic typewriter. In this mode, you type directly on paper. Even if you are comfortable with Word Processing, you may occasionally want to use the Typewriter mode to type such materials as envelopes, preprinted forms, and short memos.

## Entering the Typewriter Mode



To enter the Typewriter mode from the MAIN MENU, press **TW/WP**. Pressing **TW/WP** again returns to the MAIN MENU. To switch to the Typewriter mode from the Word Processing mode or vice versa, press **TW/WP**. Margins, tabs and other settings are independent in the two modes. Also, if you were working on a document in Word Processing, the document remains undisturbed in the machine's memory while you are working in Typewriter mode (unless you turn the machine off).

## Inserting Paper



When using the Typewriter mode, you must insert paper before you begin to type. (See "Inserting Paper," page 12.)

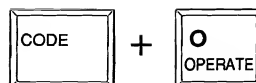
- If you insert the paper using **P INS**, be sure to press **RETURN** to return the carriage to the left margin before you begin to type.
- In L/L mode, you can use **P INS** to insert paper before you enter text in the text area.

## TYPE Mode and L/L Mode

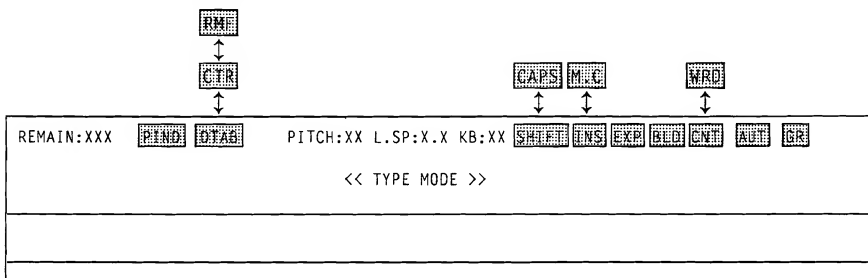
There are actually two Typewriter mode options: TYPE mode and Line-by-Line (L/L) mode.

- In TYPE mode, the characters you type are printed immediately. You can correct text, but only after it is printed. In TYPE mode, you can end lines yourself by pressing **RETURN**, or have the machine end lines automatically by selecting the "AUT" option.
- In L/L mode, each line of text appears on the screen before printing. You can proofread and edit each line of text before it is printed on paper. In L/L mode, the machine always ends lines automatically. However, you have the additional option of justifying the text by selecting the "JST" option.

## The Typewriter Mode Screen



When you enter the Typewriter mode, the following screen appears:



This screen displays a Status Line, which shows you where you are on the line and the current typewriter settings. The shaded indicators in the above illustration are those that may vary according to the settings you are using.

A one-line text display appears in the middle of the screen. In L/L mode, each line of text you type appears in the text display before it is printed. In TYPE mode, the text display is used only for the Centering, Right Margin Flush, and Decimal Tab functions. See the descriptions of those functions for more information.

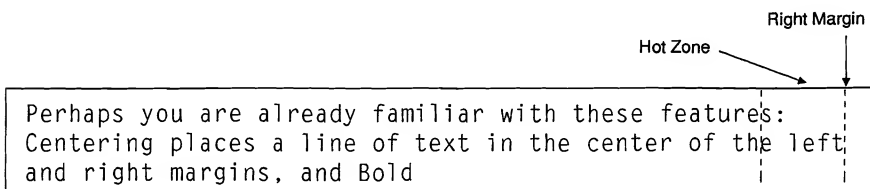
"TYPE" and "L/L" appear just above the text display; "AUT" and "JST" appear on the right side of the Status Line. To switch between TYPE and L/L mode, and the associated options, press **CODE** + **OPERATE** (**O**) one or more times until you reach the mode and option you want. The modes and options appear in the following order:

TYPE → TYPE (AUT) → L/L (AUT) → L/L (JST) → TYPE

For example, if you have just entered Typewriter mode, press **CODE** + **OPERATE** (**O**) once to turn on the AUT option; press **CODE** + **OPERATE** (**O**) again to select L/L mode.

## Typing Your Text

Type your text as on any standard typewriter. When you enter the "hot zone" (6 positions before the right margin), the machine beeps. The **REMAIN** indicator tells you the number of characters that you can still type on the current line.



If you are using TYPE mode without the AUT option, press **RETURN** to end the line and start the next line.

If you are using TYPE mode with the AUT option or L/L mode, the machine ends the line as soon as you type a space or a character following a hyphen within the hot zone.

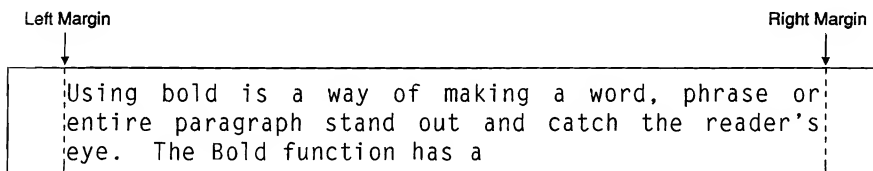
- If you want to type a space without ending the line, (another word can fit on the line), press **CODE** + **(SPACE BAR)** instead of **(SPACE BAR)**.
- If you want to type a hyphen without ending the line (the hyphen is part of the word and the characters following the hyphen can fit on the line), press **CODE** + **(-)** instead of **(-)**.
- If you reach the right margin in the TYPE mode, the machine stops. Press **RETURN** to end the line or **CODE** + **MREL (3)** to continue typing beyond the margin.

To print what you have typed, press **RETURN**, **TAB**, **CODE** + **P IND (TAB)**, **CODE** + **L IND (L)**, or **CODE** + **IND CLR (RETURN)**. The text is also printed automatically when you type a space or a character following a hyphen in the hot zone.

## Justifying Text

The Justification (JST) option allows you to print text aligned with both the left and right margins.

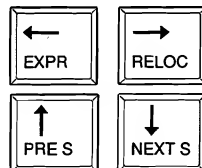
1. Press **CODE** + **OPERATE (O)** until the **JST** indicator appears.
2. Type your text. The text is displayed in the text display area, and the carriage moves simultaneously as you type. When you reach the hot zone, the line of justified text is printed as soon as you type a space, or a hyphen followed by another character.



- Press **RETURN** to end the line without justifying.
- If you reach the right margin, the machine cannot end the line automatically. Press **RETURN** to end the line.

# Special Key Functions in Typewriter Mode

## The Cursor Keys



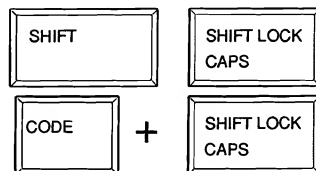
In TYPE mode, and move the carriage to any position on the line.

- Press the key once to move the carriage one position.
- Hold the key down to quickly move the carriage several positions.

and allow you to type text slightly above or slightly below the line, by moving the *paper* by 1/12 of an inch. ( moves the paper up; moves the paper down.)

In L/L mode, and move the cursor in the text display area to any position where you have already typed text. and have no function.

## Caps Lock and Shift Lock



To type an uppercase character, hold down and press any other key.

To type several uppercase characters, press once. The **SHIFT** indicator appears on the Status Line.

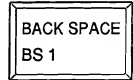
To combine uppercase characters with numbers, press + (). The **CAPS** indicator appears on the Status Line. To return to normal typing, press + again.

- When the **CAPS** indicator is on, holding down temporarily changes the **CAPS** indicator to the **SHIFT** indicator. Pressing in the same circumstance switches to **SHIFT**. Pressing switches back to **CAPS**.

## Backspace

There are three kinds of backspacing, each of which performs a slightly different function.

## Normal Backspace

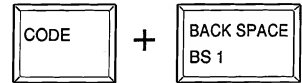


In TYPE mode, **BACKSPACE** moves the carriage one space to the left. Hold the key down for quick movement to the left.

- If the carriage is positioned in the middle of a character (see "Fractional Backspace," next), pressing **BACKSPACE** moves the carriage to the beginning of the current character.
- If you press **BACKSPACE** when the carriage is on the left margin or on the left end, the machine beeps. Press **CODE** + **MREL** (3) to move the carriage beyond the left margin.

In L/L mode, or if you are working in the text display, **BACKSPACE** deletes each character as the cursor moves to the left.

## Fractional Backspace

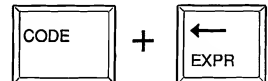


**CODE** + **BACKSPACE** moves the carriage backwards by 1/60th of an inch. This feature helps you precisely position the carriage when you reinsert a document and make corrections, or when you fill in preprinted forms.

The following table shows how the Fractional Backspace width compares to the full width of a character in the different pitch settings.

Pitch	Fractional Backspace (1/60th inch)
10	1/6 of a character
12	1/5 of a character
15	1/4 of a character

## Express Backspace



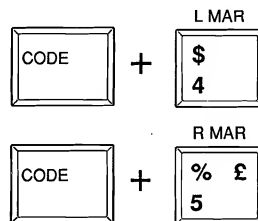
Press **CODE** + **EXPR** (←) to move the carriage all the way to the left margin. To move beyond the left margin, press **CODE** + **MREL** (3), and then press **CODE** + **EXPR** (←).

- When you are working within an indented paragraph (see "Paragraph Indent," page 35), pressing **CODE** + **EXPR** once moves the carriage to the temporary left margin position, pressing the same keys again moves the carriage to the left margin.
- In L/L mode, or when using Centering, Right Margin Flush, or Decimal Tab, pressing **CODE** + **EXPR** moves the cursor to the beginning of the line in the text display.



# Typewriter Settings

## Margin Setting

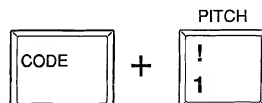


To set new left and right margins, you must be in TYPE mode. In addition, you cannot set margins while using Centering, Right Margin Flush, or Decimal Tab.

1. Move the carriage to the position where you want the new margin. Use **→** or **TAB** to move to the right. Use **←** or **CODE** + **EXPR** (**←**) to move to the left.
2. If you want to set the new margins beyond the old ones, press **CODE** + **MREL** (**3**) when the carriage reaches the current margin.
3. Press **CODE** + **L MAR** (**4**) to set a left margin or **CODE** + **R MAR** (**5**) to set a right margin.
  - There must be at least two inches between margins.
  - The margin settings in Word Processing mode and Typewriter mode are independent. The margins you set in one mode do not affect margin settings in the other.

The margins are reset to their original positions when you turn off the machine.

## Pitch Setting



The pitch setting refers to the number of characters that you can type per inch. This machine offers three pitch settings:

- 10 pitch (pica)
- 12 pitch (elite)
- 15 pitch (micron)

The machine is set to 10 pitch when you turn it on.

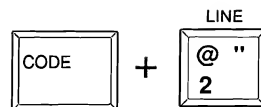
In TYPE mode, you can change the pitch at any point except when using Centering, Right Margin Flush, or Decimal Tab. In L/L mode, you can change the pitch only before you type text in the text display.

To change the pitch, press **CODE** + **PITCH** (**1**) one or more times until the pitch you want appears next to the **PITCH** indicator on the Status Line. The pitch settings appear in the following order:

PITCH: 10 → 12 → 15 → 10

The pitch returns to its original setting (10) when you turn off the machine.

## Line Spacing



The machine offers three line spacing settings:

- Single spacing (1.0)
- 1-1/2 spacing (1.5)
- Double spacing (2.0)

The line spacing is set to single spacing (1.0) when you turn on the machine.

To change the line spacing, press **CODE** + **LINE** (**2**) one or more times until the line spacing you want appears next to the **L.SP** indicator on the Status Line. The line spacing settings appear in the following order:

L.SP: 1.0 → 1.5 → 2.0 → 1.0

The line spacing returns to its original setting (1.0) when you turn off the machine.

# Making Corrections

## Making Corrections on the Screen

In L/L mode, and when using the Centering, Right Margin Flush, or Decimal Tab functions, the text you type appears on the screen but is not actually printed until you press **RETURN** or **TAB**. Therefore, you can edit the text before it is printed using the keys listed in the table below.

Key	Function
<b>BACKSPACE</b> <b>CORRECT</b> <b>WORD OUT</b> <b>CODE</b> + <b>LINE OUT</b>	To delete the character(s) to the left of the cursor and pull the rest of the text to the left.
<b>←</b> <b>→</b>	To position the cursor.
<b>CODE</b> + <b>EXPR</b> ( <b>←</b> )	To move the cursor back to the beginning of the line.
<b>CODE</b> + <b>RELOC</b> ( <b>→</b> )	To move the cursor to the end of the line.
<b>CODE</b> + <b>INSERT</b> ( <b>I</b> )	To switch the Insert mode on/off. When the <b>INS</b> indicator is on, typing a character over a previously typed character does not replace the old character. Instead, the new character appears at the cursor position, and the rest of the text is pushed one position to the right.

USING THE MACHINE  
AS A TYPEWRITER

## Making Corrections on Paper

Like many electronic typewriters, this machine provides an Erase function that allows you to erase and retype text after it has been printed. On your current line you can automatically erase a character, a word, or the entire line. You can also erase individual characters anywhere in your document.

## Making Corrections on the Current Line



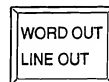
### Erasing a Character

To correct the last character you typed, simply press **CORRECT**.

To correct another character on the current line, use **BACKSPACE** to move the carriage to the mistyped character, and press **CORRECT**.

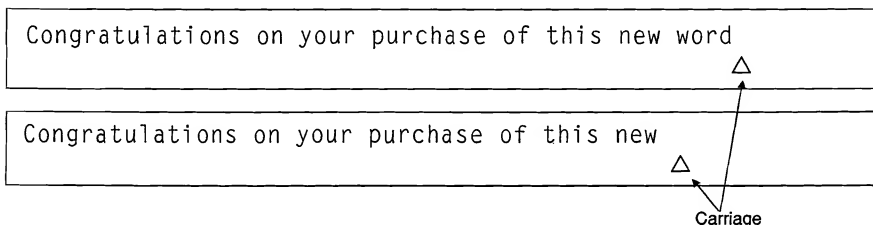
- Pressing **CORRECT** on a space moves the carriage back one position.
- In L/L mode, or while using Centering, Right Margin Flush, or Decimal tab, you can use **CORRECT** on the text display. Position the cursor immediately after the character you want to delete and press **CORRECT**.

## Erasing a Word

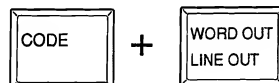


To erase an entire word, position the carriage next to the last character of the word, and press **WORD OUT**.

- You can stop the erasing in progress by pressing **CORRECT**.
- In L/L mode, or while using Centering, Right Margin Flush, or Decimal Tab, you can use **WORD OUT** on the text display. Position the cursor on the space immediately after the word to be deleted and press **WORD OUT**.

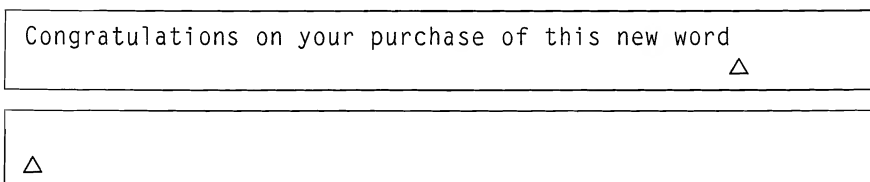


## Erasing a Line



To erase an entire line, position the carriage next to the last character in the line and press **CODE** + **LINE OUT** (**WORD OUT**).

- In L/L mode, or while using Centering, Right Margin Flush, or Decimal Tab, you can use **LINE OUT** on the text display. Position the cursor on the space immediately after the last character to be erased and press **CODE** + **LINE OUT**.



## Relocating the Carriage



After you make a correction in the middle of the current line, press **CODE** + **RELOC** (→) to move the carriage to the end of the line.

- In L/L mode, or while using Centering, Right Margin Flush, or Decimal Tab, pressing **CODE** + **RELOC** (**→**) moves the cursor to the end of the line on the text display.

## Making Corrections on Other Lines

To make a correction on lines you have already typed:

1. Use **CODE** + **P DOWN** (**CANCEL**) or the platen knob to reach the line where the correction is required.
2. Move the carriage to the character to be corrected with **BACKSPACE** or **SPACE BAR**. If necessary, use **CODE** + **BS 1** (**BACKSPACE**) to accurately position the carriage.

Congr<sub>△</sub>tulations on your purchase of this new word

3. Press **CODE** + **CORRECT**. The **M.C** indicator appears on the Status Line.
4. Retype the wrong character again. The incorrect character is erased and the **M.C** indicator disappears.

Congr<sub>△</sub> tulations on your purchase of this new word

5. Type the correct character.

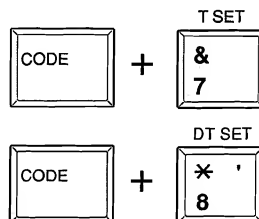
Congratulations on your purchase of this new word<sub>△</sub>

You cannot perform this function in L/L mode, or while using Centering, Right Margin Flush, or Decimal Tab.

# Formatting Text

## Tabs and Decimal Tabs

### Setting Tabs and Decimal Tabs

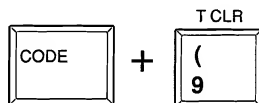


Tabs allow you to type text or columns of text at preset positions. Decimal tabs allow you to align a column of numbers at their decimal points instead of at the first character.

To set tabs, you must be in TYPE mode.

To set a tab or decimal tab, move the carriage to the desired position. Press **CODE** + **TSET** (**7**) to set an ordinary tab, or **CODE** + **DTSET** (**8**) to set a decimal tab. You can set a total of 30 tabs or decimal tabs. The tab settings are erased when you switch the power off.

### Clearing Tabs or Decimal Tabs



To clear a single tab or decimal tab, move the carriage to that position and press the **CODE** + **TCLR** (**9**).

To clear all tabs and decimal tabs, simply hold down **CODE** + **TCLR** until you see the following message:

All tabs cleared.

### Typing with Tabs and Decimal Tabs

Press **TAB** to move the carriage to the next tab or decimal tab stop. If there are no more tabs or decimal tabs on the line, the carriage moves to the right margin.

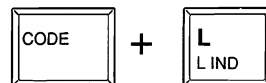
When the carriage is positioned on a decimal tab, **DTAB** appears on the Status Line. Press **TAB** until you reach the decimal tab where you want to align the column of numbers. Start typing the first number. It is not printed, but appears on the text display. As soon as you type the decimal point, the text is printed with the decimal point aligned at the decimal tab. You can then enter the rest of the number, which is printed as you type it.

Tab	Decimal Tab
May	129.84
June	34.97
July	7864.81

- Pressing **CANCEL** or **CORRECT** before you type turns off the Decimal Tab mode and returns you to normal typing.
- You cannot use the Decimal Tab function with Centering or Right Margin Flush.

## Indenting

### Line Indent

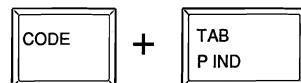


Pressing **CODE** + **L IND** (**L**) is the same as typing five spaces. This is mainly used to indent the first line of a paragraph.

Line Indent

This letter was typed on this new word processor to show you some of the many outstanding feats it can perform.

### Paragraph Indent



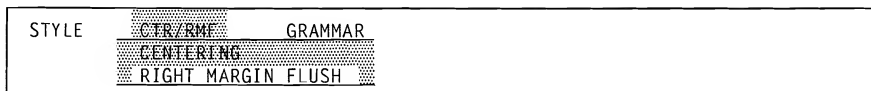
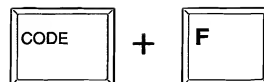
Paragraph Indent creates a temporary left margin. It indents an entire paragraph rather than just the first line.

To use Paragraph Indent, first set a tab at the desired indent position. Press **RETURN** to move the carriage back to the left margin. Press **CODE** + **P IND** (**TAB**). The **P IND** indicator appears. The text you type from that point is indented to the temporary left margin. To cancel the Paragraph Indent, press **CODE** + **IND CLR** (**RETURN**).

This letter was typed on this new word processor to show you some of the many outstanding feats it can perform.  
In fact, you have seen some of these features in this letter. Centering has placed the title right in the center of the left and right margins, and

Paragraph Indent

# Centering



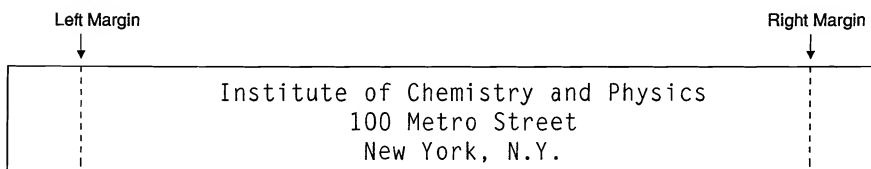
The Centering function is used to center headlines or titles between the margins. It can also be used to center text between two tab stops.

1. To center text between margins, position the carriage on the left margin. To center between tabs, press **TAB** to move the carriage to the first tab of the centering range. The text will be centered between that tab and the next tab — or the right margin if there are no more tab stops.
2. Press **MENU** to display the function menu.
3. Select CTR/RMF and press **RETURN** or **↓**.
4. Select CENTERING and press **RETURN**. The **CTR** indicator appears on the Status Line.

Short cut: Instead of steps 2, 3, and 4, press **CODE** + **F**.

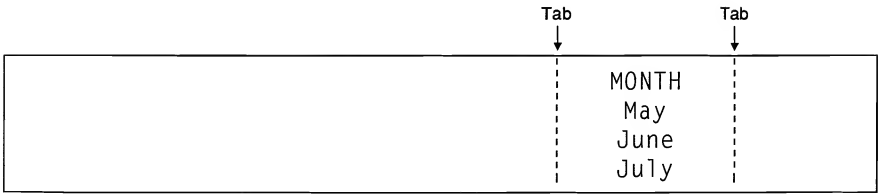
5. Type your text. The text is temporarily displayed on the screen and you may easily edit any mistake.
6. Press **RETURN** or **TAB**. The text is printed.
  - Pressing **CANCEL** before typing, switches back to the normal mode.
  - The Centering function cannot be executed while in the Decimal Tab or Right Margin Flush mode.
  - The Centering function cannot be executed if the carriage is not first positioned on the left margin or on a tab stop.

## Centering between Margins

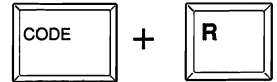




## Centering between Tabs



## Right Margin Flush



The Right Margin Flush function aligns the last character of a line with the right margin. This is used, for example, to type the date of a letter.

1. Press **MENU** to display the function menu.
2. Select CTR/RMF and press **RETURN** or **↓**.
3. Select RIGHT MARGIN FLUSH and press **RETURN**. The **RMF** indicator appears on the Status Line.

Short cut: Instead of steps 1, 2, and 3, press **CODE** + **R**.

4. Type your text. The text is temporarily displayed on the screen and you can easily edit any mistakes.
5. Press **RETURN** or **TAB**. The text is printed.



- Pressing **CANCEL** before you have typed any text cancels the Right Margin Flush function, and returns the machine to the normal mode.
- You cannot use the Right Margin Flush function together with the Decimal Tab or Centering function.

# Character Style Options

The style function allows you to highlight parts of your text using boldface characters, underlining, or expand (a space is automatically inserted between the characters). The Bold, Underline, and Expand options can be used together in any combination.

## Keyboard Setting

To type accent marks, mathematical symbols and other special characters, you need to have a daisy wheel that provides such non-standard characters. If you have an International or Symbol daisy wheel, you must also change the Keyboard setting to type the special characters.

The table below shows the available Keyboard settings.

Keyboard	Definition
I	(Standard) English text
II	(International) Languages using accents and other special characters
III	(Symbol) Mathematical symbols and Greek characters

To type the special characters, first change the daisy wheel, and then change the Keyboard setting on the Status Line. Press **CODE** + **KB** (**K**) one or more times until the keyboard number you want appears next to the **KB** indicator on the Status Line. The keyboard numbers appear in the following order:

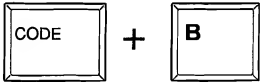
KB: I → II → III → I

See "Character Keys," page 7, for details on using the different keyboard settings.

The keyboard setting cannot be changed while using Centering, Right Margin Flush, or Decimal Tab. The Keyboard setting can be changed in L/L mode if there is no text on the display.

The keyboard returns to its original setting when you turn off the machine.

## Bold

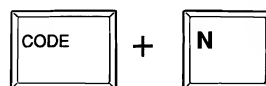


STYLE	CTR/RMF	GRAMMAR
BOLD	OFF	(ON)
UNDERLINE	OFF	(CNT) (WRD)
EXPAND	OFF	(ON)

1. Press **MENU** to display the function menu.
2. Select **STYLE** and press **RETURN** or **↓**.
3. Select **BOLD**.
4. Use **(SPACE BAR)** to select **ON**.
5. Press **RETURN**. The **BLD** indicator appears on the Status Line.  
Short cut: Instead of steps 1, 2, 3, 4, and 5, press **CODE** + **B**. If the function was **OFF** it is switched to **ON** and vice-versa.
6. Type your text. The characters are automatically bolded.
7. To return to normal typing, repeat steps 1, 2, 3 and use **(SPACE BAR)** to turn the function **OFF** or press **CODE** + **B**.

Using bold is a way of making a word, phrase or entire paragraph stand out and catch the reader's eye. The Bold function is often

## Underline



STYLE	CTR/RMF	GRAMMAR
BOLD	OFF	(ON)
UNDERLINE	OFF	(CNT) (WRD)
EXPAND	OFF	(ON)

1. Press **MENU** to display the function menu.
2. Select **STYLE** and press **RETURN** or **↓**.
3. Select **UNDERLINE**.
4. Use **(SPACE BAR)** to select **CNT** (continuous) or **WRD** (word).
5. Press **RETURN**. The corresponding **CNT** or **WRD** indicator appears on the Status Line.  
Short cut: Instead of steps 1, 2, 3, 4, and 5, press **CODE** + **N** to switch the function to **OFF**, **CNT**, or **WRD**.
6. Type your text. The characters are automatically underlined. If the **CNT** indicator is on, everything is underlined; if the **WRD** indicator is on, spaces are not underlined.
7. To return to normal typing, repeat steps 1, 2, 3 and use **(SPACE BAR)** to 5 to turn the function **OFF** or press **CODE** + **N**.

## Continuous Underline

Underlining text is a way of making a word, phrase or entire paragraph stand out and catch the reader's eye. The Underline function is

## Word Underline

Underlining text is a way of making a word, phrase or entire paragraph stand out and catch the reader's eye. The Underline function is

## Expanded Text

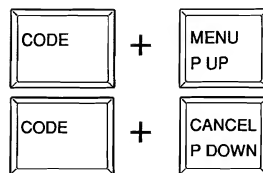
STYLE	CTR/RMF	GRAMMAR
BOLD	OFF	(ON)
UNDERLINE	OFF	(CNT) (WRD)
EXPAND	OFF	(ON)

1. Press **MENU** to display the function menu.
2. Select **STYLE** and press **RETURN** or **↓**.
3. Select **EXPAND**.
4. Use **SPACE BAR** to turn the function ON.
5. Press **RETURN**. The **EXP** indicator appears on the Status Line.
6. Type your text. A space is automatically inserted after each character.
7. To return to normal typing, repeat steps 1, 2, 3 and use **SPACE BAR** to turn the function OFF.

C O P Y      ← Expand

This letter was typed on this new Word Processor to show you some of the many outstanding feats it can perform.

## Subscripts and Superscripts



To type subscripts, press **CODE** + **P UP** (**MENU**). In TYPE mode, this moves the paper down 1/12 inch. In L/L mode, this moves the cursor slightly below the line. All the characters you type are printed lower than the previous characters. To cancel this function, press **CODE** + **P DOWN** (**CANCEL**).

Superscripts are typed in the very same way, except that you press **CODE** + **P DOWN** and cancel with **CODE** + **P UP**.

## Accents ("Dead" Keys)

The keyboard allows you to type the accent marks required for such languages as French, German, and Spanish, as well as other special symbols. See "Character Keys," page 7, for information on the characters you can type using each keyboard setting.

1. Switch the **KB** indicator to II (International) or III (Symbol) using **CODE** + **KB** (**K**). (See "Keyboard Setting," page 38.)
2. Install the appropriate print wheel. (See "Changing Daisy Wheels," page 15.)
3. Type the accent.
4. Type the base character. If you are working on the text display, the dead character and the base character are displayed side by side (Example: ^a).

## Superimposed Characters

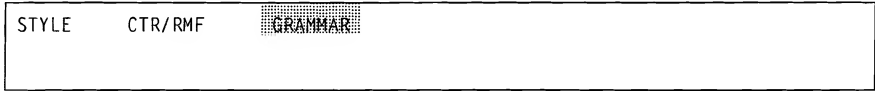
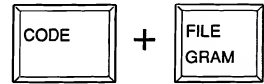
Superimposed characters are characters created by typing one character over another. For example, ø is created by typing "0" and "/"; ¥ is created by typing "Y" and "=".

In TYPE mode, you can create superimposed characters by simply typing the first character, pressing **BACKSPACE** or **←** and typing the second character. In L/L mode, or when using Centering, Right Margin Flush, or Decimal Tab, type superimposed characters as follows:

1. Type the first character.
2. Press **CODE** + **BACKSPACE**. The cursor moves one space to the left.
3. Type the second character. The first character, followed by a permanent backspace symbol "←", and the second character appear on the display.

# Special Typewriter Tools

## Checking Spelling

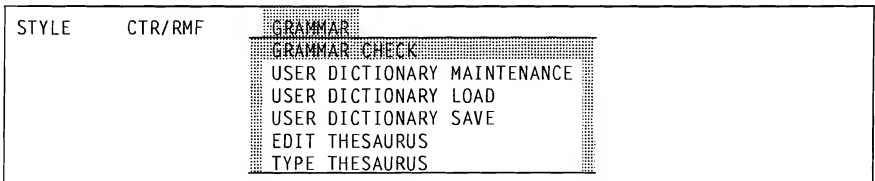


The Typewriter mode provides a Spell Checker to help you reduce the amount of time you spend proofreading your documents. The Spell Checker can check your spelling as you type, or check words you have already typed on the current line. However, in Typewriter mode, the Spell Checker cannot scan an entire document for spelling errors or check your punctuation.

You can also create a User Dictionary, which is a list of words that the Spell Checker uses along with its own dictionary when checking your spelling.

To check for spelling errors:

1. Press **MENU** to display the function menu.
2. Select GRAMMAR, then press **↓** or **RETURN** to display the submenu.



3. Select GRAMMAR CHECK and press **RETURN**.

Short cut: Instead of steps 1, 2, and 3, press **CODE** + **GRAM** (**FILE**).

Once the Spell Checker is on, the **GR** indicator appears on the Status Line. The words you type are checked for spelling errors and redundancy (words mistakenly typed twice). If an error is found, the system interrupts your typing and displays a menu of options. You may ignore the misspelling, ask for SUGGESTIONS, retype the word, or add this word to the user dictionary. To replace the suspect word, select SUGGESTION. The old word is automatically erased and a list of suggested replacements appears. Select a suggested replacement. The replacement word is printed.

You can also check the previous words on the current line. Simply move the carriage or the cursor back through the text. The Spell Checker can detect errors on the current line even if you turned it on after typing the text.

To turn off the Spell Checker, press **CODE** + **GRAM**.

For more information on the Spell Checker, see "Special Word Processing Tools", page 83.

## Using the Thesaurus (Option)

The EDIT THESAURUS and the TYPE THESAURUS are both available as an option.

STYLE	CTR/RMF	GRAMMAR
		GRAMMAR CHECK
		USER DICTIONARY MAINTENANCE
		USER DICTIONARY LOAD
		USER DICTIONARY SAVE
		EDIT THESAURUS
		TYPE THESAURUS

For more information on the Thesaurus, see "Using the Thesaurus" on page 96.

## CHAPTER 4

# Word Processing

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Introduction to Word Processing ....	45
Starting Word Processing .....	48
Editing Text.....	52
Formatting Text .....	63
Character Style Options .....	78
Special Word Processing Tools .....	83
Printing Documents .....	99
Saving and Retrieving Documents.....	105
Managing Files .....	108



# Introduction to Word Processing

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A word processor is almost as easy to use as a standard electronic typewriter, yet offers many advantages over typing. This section describes the advantages of word processing as well as other differences you should be aware of if you have never used a word processor.

## Advantages of Word Processing

When you use a word processor, the text you type appears on a screen and is stored in an electronic memory instead of going directly onto paper. The screen is used as a "window" through which you view only a portion of your document.

Unlike typing on a standard electronic typewriter, word processing allows you to:

- Type continuously without worrying about line or page breaks

The word processor calculates how much text can fit on one line and automatically "breaks" the line, that is, it ends the line and continues the text on the next line. You need only press the **RETURN** key at the end of a paragraph, title, or other text that does not continue to the end of the line.

Similarly, the word processor calculates the number of lines that will fit on one page according to your specifications, designates a page break and continues the text on the next page. Headers and footers — text printed on the top and bottom of each page — and page numbers can be printed automatically.

- Revise documents without retyping

Perhaps the most important advantage of word processing is that it allows you to revise a document as many times as necessary before you print it on paper. This word processor offers many easy methods for editing and revising text, with "short-cuts" to make the procedures even faster.

- Automatically format text

With word processing, you can create a format for your document before, while, or after you type the text, and change the format as many times as you wish. A word processor can automatically format text in ways that would be very time-consuming using a typewriter. The word processor also reformats the document when you make corrections in your document.

- Save and retrieve a document

Any document you type can be saved on a disk. You can print, revise or use the saved document as the basis for a new one, or simply save the documents instead of paper copies for your records.

## Other Word Processing Features

In addition to standard word processing functions, this word processor offers several special features. These include:

- **Grammar Check**

The word processor includes a spell checker, punctuation alert, and thesaurus (available as an option), which can help you create quality documents quickly and efficiently.

- **Page Layout View**

The word processor provides a preview function which displays on the screen an approximation of how the document will look when it is printed on paper. You can change the format if necessary before you print it.

- **Dual Screen**

You can split the screen in two halves and work simultaneously on two documents. This is useful, for example, when you are working on one document and need to refer to another. You can also copy or move text from one document to the other.

- **Multiple Keyboard Layouts**

The word processor provides three different keyboard settings, so that you can type accents and international symbols in addition to standard characters. Special characters are displayed on the screen, and appear on the printed document if you change to the corresponding daisy wheel.

- **Integration with Other Modes**

As you know, this machine offers several powerful modes other than Word Processing. By combining the Word Processing with other modes, you can, for example,

- Convert your Spreadsheet files into Word Processing documents that you can revise or combine with other text.

## Special Keys Used in Word Processing

If you have never used a word processor, you may find that certain keys produce different results from the same keys on a standard typewriter. In addition, the keyboard has several keys that do not appear on a typewriter.

In particular, be aware of the following keys (the "+" sign indicates that you must hold down the first key while pressing the second):

**RETURN**

Because the word processor ends lines automatically, press **RETURN** only to end a paragraph or line of text that does not continue to the end of the line.

**CODE** + another key

Produces the character or function printed in green on the keytop, and is used in "short cut" procedures to perform other functions.

**CODE** + **CAPS** **(SHIFT LOCK)**

Allows you to combine uppercase characters with numbers. (To return to normal typing, press **CODE** + **CAPS** again.)

## Function Menu and On-Screen Help

You can perform many Word Processing functions by selecting the function from a menu. Press **MENU** from the WP INDEX screen or WP Input/Edit screen to display the function menu. The following menu appears:

### Function Menus on WP INDEX Screen

<b>EXIT</b>	COPY	DELETE	RENAME	DISK COPY	ALL DELETE	PRINT
-------------	------	--------	--------	-----------	------------	-------

### Function Menus on Word Processing Input/Edit Screen

<b>STYLE</b>	BLOCK	CTR/RMF	GRAMMAR1	GRAMMAR2	SEARCH	FORM	PAGE PRINT
--------------	-------	---------	----------	----------	--------	------	------------

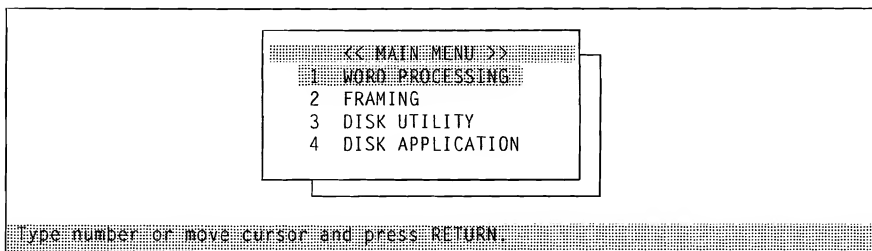
To perform these functions, follow the procedures described in this chapter.

Once you are familiar with the functions, you can select them more quickly using "short cuts" consisting of **CODE** + a letter key. If you need help remembering which functions are available in Word Processing mode and how to perform them using short cuts, press **CODE** + **HELP** (**H**). When the list of topics appears, press **W** for word processing.

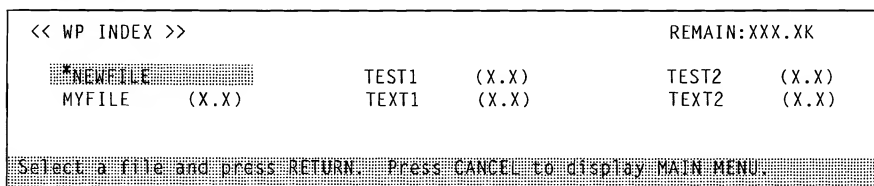
# Starting Word Processing

To start using Word Processing:

1. Turn on the power. The MAIN MENU appears. (If you are in Typewriter mode, press **TW/WP**. If you are in another mode, exit from that program and return to the MAIN MENU.)



2. Move the cursor to WORD PROCESSING if it is not already there and press **RETURN**. The WP INDEX screen appears.

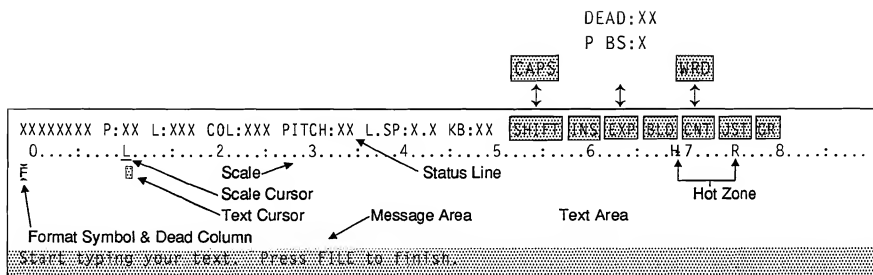


This screen lists the files on the disk created in Word Processing mode. From this screen you can retrieve an existing file, create a new document, or exit from the Word Processing mode. You can also perform various file functions, including copying, deleting, renaming, or printing a file, copying an entire disk, or deleting all the Word Processing files on the disk. To perform these functions, press **MENU** to display the function menu, or use the short cut procedures described later in this chapter and listed when you press **CODE** + **HELP** (**F**).

3. To create a new document, select \*NEWFILE and press **RETURN**. The Input/Edit screen appears.

## Input/Edit Screen

The Input/Edit screen is the main display of the word processor. You type and edit your text on this screen.



The following reminder appears on the message line, and remains until you press any key:

Start typing your text. Press FILE to finish.

## Screen Symbols

### Status Line

The Status Line displays the name of the file you are working on, and the settings and functions currently in effect. Most of the indicators on the Status Line are followed by a value (example: PITCH: 10) and are always displayed. The indicators on the right appear (in reverse image) only when the corresponding function has been activated (example: BLD appears when the Bold function is on). (For a complete list of the indicators that appear on the Status Line, see "Status Line Indicators," page 172.)

### Scale

The scale is the electronic equivalent of the scale on the top of a typewriter. The scale assists you in determining where characters will be printed on a page. The numbers indicate the position from the left edge of the paper. Other symbols remind you of the current format settings (example: L and R indicate the positions of the left and right margins). (For a complete list of symbols that appear in the scale, see "Screen Symbols," page 171.)

The scale can be removed from the screen in order to display one additional line. For details, see "Turning off the Scale," page 74.

### Text Area

The bulk of the screen is your work area, a window into your document. Although it only displays ten or more lines at a time, you can move the window up, down, left, and right to display all parts of your document.

The only part of the screen you cannot use to display text is the "dead column" (the first column on the left), which the word processor reserves for the "format change" symbol "F". Other symbols appear in the text to remind you of the format functions that you used, but will not be printed. (For a complete list of symbols that appear in the Text Area, see "Screen Symbols," page 171.)

The text area can be split in order to display two documents simultaneously. (For details, see "Dual Screen Display," page 76.)

## Text and Scale Cursors

A lighted square, the text cursor, indicates your current position in the text area. Another cursor, the scale cursor, is an underline that indicates your position relative to the scale and follows the horizontal movement of the text cursor.

## Message Line

This line is reserved for messages that ask you a question, give an instruction, or display error messages. When no message is displayed, this line is used for your text.

For a list of error messages, see "Error Messages," page 167.

## Hot Zone

The last six columns before the right margin are defined as the "hot zone". The beginning of this area is marked by the "H" symbol on the scale, which corresponds to the point at which a typewriter bell rings to warn you that you are close to the right margin. The word processor does not beep. It ends the line automatically and continues the text on the next line.

## Spaces and Permanent Spaces

Spaces entered by pressing **SPACEBAR** are called "soft" spaces. When entered in the hot zone, the word processor ends the line, and the cursor moves to the next line.

Permanent spaces entered by pressing **CODE** + **SPACEBAR** are special spaces that link words together, protecting them from being separated on different lines. A permanent space is displayed with the symbol "␣" and is considered part of the two words it links. A permanent space does not cause the word processor to end the line when entered in the hot zone.

## Function Menu

When you press **MENU**, the status line is temporarily replaced with a menu of Word Processing functions. These functions are described throughout this chapter. To learn how to use menus most efficiently, see "Using Menus," page 20.

## Creating a Document

Type your text just as you would on a typewriter. The text appears on the screen instead of being printed on paper. You can type a paragraph continuously without being concerned about carriage returns. In the hot zone, when a word is going to extend beyond the right margin, the word and the cursor will be moved to the next line automatically. You need only press **RETURN** to start a new paragraph or end a line that is not long enough to reach the right margin.

If you make a mistake, use **BACKSPACE** or **CORRECT** to delete. For more details about corrections, see "Editing Text," page 52.

To print your text, press **MENU** to display the function menu, select PAGE PRINT, and press **RETURN**. Follow the instructions that appear on the screen. For more details about printing, see "Printing Documents," page 99.

When your text is complete or when you need a break, you can save your document on a disk. To save your document, press **FILE**, and follow the instructions that appear on the screen. For more details about saving a document, see "Saving and Retrieving Documents," page 105.

## Exiting the Word Processing Mode



To exit the Word Processing mode:

1. Insert a data disk if you have not yet done so, and press **FILE**. The following message appears asking you to save or abandon the file:

Save file? Press RETURN to save, CORRECT to abandon.

2. To save the file you were working on, press **RETURN**. The machine asks you to enter a file name. Enter a file name and press **RETURN**. The WP INDEX screen appears and displays the file name you entered.

To "abandon" the file — that is, delete the file without saving it — press **CORRECT**. The WP INDEX screen appears.

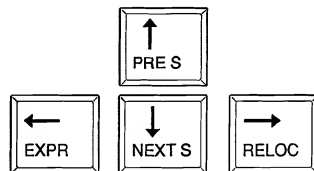
3. To display the MAIN MENU, press **CANCEL** or press **MENU** and select EXIT from the function menu.

# Editing Text

## Moving Through the Document

To make a revision, you must first move the cursor to that part of the document.

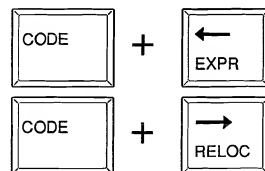
### Moving One Position at a Time



The cursor keys, , , , and , move the cursor one position in the direction of the arrow on their keytops.

- and never move the cursor beyond the margins.
- Pressing at the end of a line sends the cursor to the beginning of the next line; pressing then sends it back to the end of the previous line.
- If the cursor is at the top or bottom of the text area, and automatically shift ("scroll") the text down or up to display more text—unless, of course, there is no more text because you are at the beginning or the end of the document.

### Jumping Left and Right



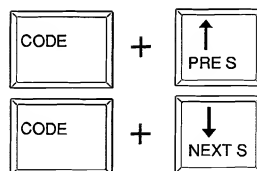
The Express Backspace and Relocation functions move the cursor quickly to the beginning or end of a line.

Press + () to move the cursor to the left margin. To move the cursor beyond the left margin, press + (3) at the left margin first, and press + . The cursor moves all the way to the left end. Pressing + moves the cursor to the temporary left margin when you are in the middle of an indented paragraph.

Press + () to move the cursor to the end of the current line. However, the cursor does not move past a symbol that signals the end of a paragraph ("¶", "↓", and "␣"). To move the cursor beyond the right margin, press + at the right margin position first, then press + . The cursor then moves all the way to the right end.



## Moving One Full Screen at a Time

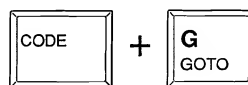


**CODE** + **PRE S** (↑) scrolls down one full screen. If the cursor is not on the first line, the first time you press **CODE** + **PRE S** the cursor moves to the beginning of the first line of the current screen. Pressing the same keys from that point scrolls to the previous screen.

**CODE** + **NEXT S** (↓) scrolls up one full screen. If the cursor is not on the last editable line of text, the first press of **CODE** + **NEXT S** moves the cursor to the beginning of the last editable line of the screen. Pressing the same keys from that point scrolls to the next screen.

- When no message is displayed, a line of text appears in the message area. However, the cursor cannot reach that line, so the last editable line is actually the second line from the bottom of the screen.
- If there is no more text because you are at the beginning or the end of the document, the screen window does not scroll.

## Going to a Specific Page



The Goto Page function allows you to move the cursor to the beginning of any page in the document.

1. Press **CODE** + **GOTO** (G). The machine asks you to type the number of the page where you wish to move.





PAGE: 1

2. Type the page number, then press **RETURN** to move the cursor to that page.

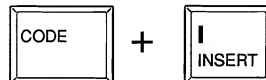
If you enter an incorrect page number, you can change it using **CORRECT**. You can cancel the operation by pressing **CANCEL**.


If you enter a page number that is higher than the number of the last page, the cursor jumps to the last page.

Instead of typing a page number, you can press one of the cursor keys after pressing **CODE** + **GOTO** (G):

<b>CODE + GOTO, then</b>	<b>Function</b>
	Moves the cursor to the beginning of the current page, or to the beginning of the previous page when the cursor is at the beginning of the current page.
	Moves the cursor to the beginning of the next page.
	Moves the cursor to the beginning of the document.
	Moves the cursor to the end of the document.

## Inserting Text



Pressing **CODE** + **INSERT** () switches the word processor between the Insert mode and the Overwrite mode.

In Insert mode (**INS** indicator on), the characters you type appear in front of the cursor, and the rest of the line automatically moves to the right. The Insert mode allows you to insert characters without deleting other characters. To make sure that you do not accidentally delete text, it is recommended that you do most of your typing in the Insert mode.

In the Overwrite mode (**INS** indicator off), each character you type replaces the current character. You type "over" the existing text.

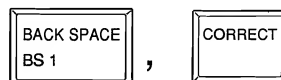
## Deleting Text

You can delete text in four ways:

- a character at a time
- a word at a time
- a line at a time
- a block at a time

Whichever way you choose, the word processor closes the gap and reformats the text according to your format settings.

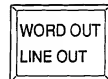
### Deleting a Character



Press **BACKSPACE** or **CORRECT** to delete one character to the left of the cursor.

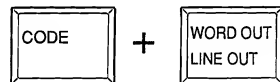
**BACKSPACE** and **CORRECT** also delete the paragraph end symbols "¶", "↓", and "␣", except when these symbols are located just before a format symbol "¶" or a centering symbol "␣".

## Deleting a Word



To delete a word, position the cursor on the space immediately following the word and press **WORD OUT**. Pressing **WORD OUT** deletes the word to the left of the cursor.

## Deleting a Line

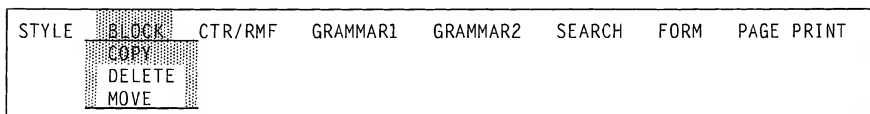
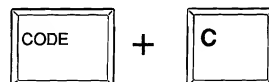


To delete a line or part of a line, position the cursor anywhere on the line and press **CODE** + **LINE OUT** (**WORD OUT**). Pressing **CODE** + **LINE OUT** deletes any portion of the line to the left of the cursor, back to the beginning of the line.

## Block Editing

A block is a continuous section of text. A block can be copied, deleted, or moved to another part of the document. A block can also be copied into a different file.

### Copying a Block



1. Position the cursor on the first character of the block you want to copy.
2. Press **MENU** to display the function menu.
3. Select **BLOCK** and press **RETURN** or **↓**.
4. Select **COPY** and press **RETURN**. The following message appears:

Move cursor to block end. Press RETURN or to store temporary file press TEMP.

Short cut: Instead of steps 2, 3 and 4, press **CODE** + **C**.

5. Move the cursor to the end of the block to be copied. As you move the cursor, the block is marked in reverse image. You can move the cursor back toward the beginning of the block to unmark. All key combinations used to move the cursor can be used when marking a block. (See "Moving through the Document," page 52.)
6. When the block to be copied is marked, press **RETURN**. The following message appears:

Move cursor to destination for blocked text and press RETURN.

**Note:** Press **TEMP** (**T**) instead of **RETURN** to copy text to a different file. (See "Copying a Block between Two Files," page 58.)

7. Move the cursor to the location where you want to insert the block and press **RETURN**. The block is copied to that position and the document is automatically reformatted.

The block is inserted regardless of the current mode (Insert or Overwrite) and never overwrites text at the position where you insert it.

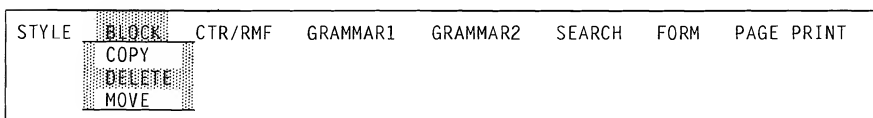
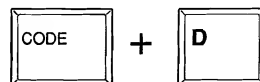
8. Press **CANCEL** at any step to cancel the function.

Since copying a block of text increases the size of your document, it might happen that you run out of memory. When this happens, the copy operation is cancelled and the following message appears:

Not enough memory remaining.

You must either first delete a portion of the document to free some space, or try to copy a smaller block. To complete a long document, you may need to divide it into two files, and edit each file separately.

## Deleting a Block



1. Position the cursor on the first character of the block you want to delete.
2. Press **MENU** to display the function menu.
3. Select **BLOCK** and press **RETURN** or **↓**.
4. Select **DELETE** and press **RETURN**. The following message appears:

Move cursor to end of block to delete and press RETURN.

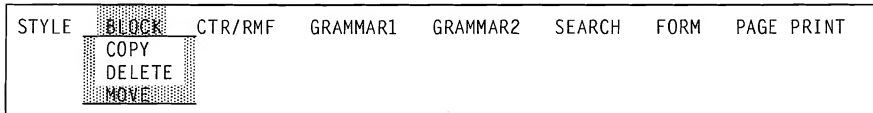
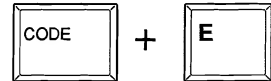
Short cut: Instead of steps 2, 3 and 4, press **CODE** + **D**.

5. Move the cursor to the end of the block to be deleted. As you move the cursor, the block is marked in reverse image. You can move the cursor back toward the beginning of the block to unmark. All key combinations used to move the cursor can be used when marking a block. (See "Moving through the Document," page 52.)
6. When the block to be deleted is marked, press **RETURN**. The machine asks for confirmation:

Delete? Press RETURN(yes) or CANCEL(no).

- Press **RETURN** to delete the block. Any text following the block is automatically reformatted.
- Press **CANCEL** at any step to cancel the function.

## Moving a Block



- Position the cursor on the first character of the block you want to move.
- Press **MENU** to display the function menu.
- Select **BLOCK** and press **RETURN** or **↓**.
- Select **MOVE** and press **RETURN**. The following message appears:

Move cursor to end of block to move and press RETURN.

Short cut: Instead of steps 2, 3 and 4, press **CODE** + **E**.

- Move the cursor to the end of the block to be moved. As you move the cursor, the block is marked in reverse image. You can move the cursor back toward the beginning of the block to unmark. All key combinations used to move the cursor can be used when marking a block. (See "Moving through the Document," page 52.)
- When the block to be moved is marked, press **RETURN**. The following message appears:

Move cursor to destination for blocked text and press RETURN.

- Move the cursor to the location where you want to insert the marked block and press **RETURN**. The marked block moves to that position and the document is automatically reformatted.

The block is inserted regardless of the current mode (Insert or Overwrite) and never overwrites text at the position where you insert it.

- Press **CANCEL** at any step to cancel the function.

# Copying a Block Between Two Files

## Using Temporary Files

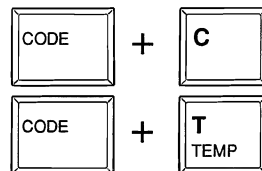
STYLE	<b>BLOCK</b>	CTR/RMF	GRAMMAR1	GRAMMAR2	SEARCH	FORM	PAGE PRINT
	COPY						
	DELETE						
	MOVE						

To copy a block from one file to another, you save the block in a reserved place in the memory called a Temporary File. Once you have saved a block in the Temporary File, you can copy it as many times as you wish, either into the same file or into different files.

Each time you save a block in the Temporary File, you erase the previous contents of the file. The contents are erased completely when you specify the DISK COPY function or turn off the machine.

You can save up to about 3,700 characters in the Temporary File.

## Saving the Temporary File



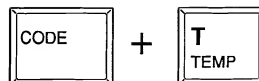
1. Position the cursor on the first character of the block you want to copy.
2. Press **MENU** to display the function menu.
3. Select **BLOCK** and press **RETURN** or **↓**.
4. Select **COPY** and press **RETURN**. The following message appears:

Move cursor to block end. Press RETURN or to store temporary file press TEMP.

Short cut: Instead of steps 2, 3 and 4, press **CODE** + **C**.

5. Move the cursor to the end of the block to be copied. As you move the cursor, the block is marked in reverse image. You can move the cursor back toward the beginning of the block to unmark. All key combinations used to move the cursor can be used when marking a block.
6. When the block is marked, press **CODE** + **TEMP** (**T**) to store the file in temporary memory. DO NOT press **RETURN**.
7. Press **CANCEL** at any step to cancel the function.

## Recalling the Temporary File



You can insert the contents of the Temporary File into any file you are working on.

1. Position the cursor where you want to insert the contents of the Temporary File.
2. Press **CODE** + **TEMP** (**T**). The following message appears:

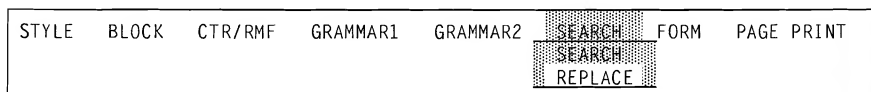
You can recall temporary file. To recall temporary file press RETURN.

3. Press **RETURN** to insert the text in the Temporary File at the cursor position.

## Searching for Text

The Search function locates a specific sequence of text. You can use the Search function to quickly move to a certain section in the document. You can also use Search to scan the document for all occurrences of a sequence, and replace all or some of those occurrences with another sequence. (See "Search and Replace," page 60.)

### Search



The Search function scans the text from the current cursor position and pauses when the sequence is found, waiting for you to tell it whether to stop there or proceed to the next occurrence.

1. Position the cursor at the beginning of the section that you wish to scan. If you want to scan the entire document, for example, move the cursor to the beginning of the text.
2. Press **MENU** to display the function menu.
3. Select **SEARCH** and press **RETURN** or **↓**.
4. Select **SEARCH** and press **RETURN**.

Type search word(s). Press RETURN to start search.  
SEARCH:

5. Enter the sequence of text you are looking for and press **RETURN**.
6. Wait for the word processor to find the first occurrence. The following prompt appears:

Press RETURN to search again, or press CANCEL to stop search.

7. If this occurrence is the one you are looking for, press **CANCEL** to end the search. If you wish to find the next occurrence, press **RETURN** to continue the search.

When there are no more occurrences, the following message appears.

Word(s) not found.

8. To resume normal word processing, press any key when this message appears. If you want to search for the same sequence again, you can do so without re-entering the sequence.

## Specifying the Search Sequence

When specifying the Search sequence:

- You can specify up to 63 characters. An accented character (made with a dead key) or a superimposed character (made with a permanent backspace) counts as a single character even if it takes two or more keystrokes to type.
- The Search function distinguishes between upper and lower case letters. For example, if you specify "BROTHER", it will not stop at "brother" or "Brother".
- Each space counts as one character.
- The area where you type the sequence initially appears as a continuous underline. Everything before the underline is considered part of the sequence. The sequence shown below, for example, is five characters long because it ends with two spaces.

Type search word(s). Press RETURN to start search.  
SEARCH :AAA

- The Search function stops at every sequence that matches the sequence that you have specified — even if the match is inside a word. If your sequence is "at", it stops at "at" of "hat", "attention", etc. If you wish to search only for the word "at", specify "\_at\_", leaving a space on each side of the word.
- The Search function ignores character style options such as bold, underline, subscript, or superscripts. If you specify "A2", it stops at "A2", "A<sup>2</sup>", "A<sub>2</sub>" — and all combinations with bold and underline as well.
- Pressing **CANCEL** during the Search function cancels the function, but the sequence remains in memory until you define another, or turn off the power.



## Search and Replace

STYLE	BLOCK	CTR/RMF	GRAMMAR1	GRAMMAR2	SEARCH SEARCH REPLACE	FORM	PAGE	PRINT
-------	-------	---------	----------	----------	-----------------------------	------	------	-------

The Search and Replace function is like the Search function, with the option of replacing some or all occurrences with another sequence. Applications include quick correction of a misspelled word everywhere that it occurs, and replacement of words that occur often in your text.

The word processor reformats your document if the replacement is not the same length as the original.

1. Position the cursor at the beginning of the section that you wish to scan. If you want to scan the entire document, for example, move the cursor to the beginning of the text.
2. Press **MENU** to display the function menu.
3. Select **SEARCH** and press **RETURN** or **↓**.
4. Select **REPLACE** and press **RETURN**.

Type search and replace word(s). Press ↑, ↓ to select. RETURN to start search.
SEARCH : <input type="text"/>
REPLACE: <input type="text"/>

5. Enter both the text that you wish to look for and the replacement. Use **↑** and **↓** to shift between the two input areas and press **RETURN** when input is completed.

Global? Press RETURN(yes) or TAB(no).
---------------------------------------

6. If you press **RETURN**, all occurrences from the cursor position to the end of the document are automatically replaced. When the function has been completed, the cursor moves to the end of the file and returns you to the normal edit mode. To stop the function in progress, press **CANCEL**.

If you press **TAB**, the word processor stops at the first occurrence and displays the following message:

Press RETURN to replace word(s), TAB not to replace word(s), CANCEL to exit.
--

7. To replace this occurrence, press **RETURN**. The word processor makes the change, then stops at the next occurrence and displays the above message again.

To search for the next occurrence without replacing, press **TAB**. The word processor stops at the next occurrence and displays the above message again.

To stop searching and return to the normal Edit mode, press **CANCEL**. If you mistakenly press this key, you can re-start from step 1. Since the Search and Replace sequences remain in memory until you define others, you do not have to re-enter them in step 5.

When there are no more occurrences, the following message appears, and then disappears when you hit a key.

Word(s) not found.

If you repeatedly replace sequences with longer ones in a very long document, you may run out of memory. In such a case, the function is cancelled and the following message appears:

Memory full.

The message remains until you delete some portion of the document to free some memory space.

# Formatting Text

An important advantage in a word processor is that it allows you to change the left, right, top, and bottom margins, tab stops, and other format settings on the screen without having to retype. The word processor adjusts the text to fit the new format settings.

## Format Change Symbol

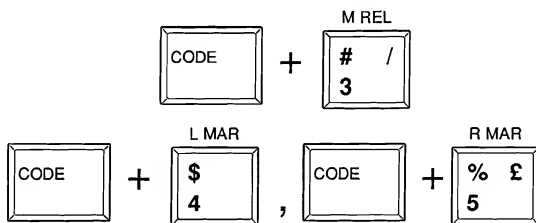
The word processor reserves the first column of the text area for the format change symbol "¶". Each time you change the left or right margin, tab stops, justification, or other format settings, — this symbol appears in the first column at the beginning of the paragraph, and the word processor adjusts the text to fit the new settings. These new settings affect not only the current paragraph, but also all subsequent text up to the next format change symbol. The text above the symbol remains unchanged.

### Deleting a Format Change Symbol

You may delete a format change symbol when it appears at the "0" position on the scale. The text will then conform to the format of the text above it. To delete the symbol, follow the instructions for "Deleting a Block" on page 56. Highlight the format change symbol as part of the block.

Note: You cannot delete the first format change symbol in the file.

## Margins



The left and right margins are set to columns 10 and 75, respectively, for a new file. Margins can be changed at any time before, while, or after typing the text. Each time you move the left or right margin, an "¶" symbol appears in the first column of the first line of the current paragraph. An "¶" symbol always follows the "↵", "↶", and "↷" symbols. The new setting affects the whole document from the current line up to the next "¶" symbol. If there is some text already input in the affected portion, it will automatically be readjusted to fit between the new margins. The text above the "¶" symbol retains the previous margin settings.

1. Move the cursor to the new position for the left or right margin while observing the scale. If the new position is beyond the current margins, press **CODE** + **MREL** (**3**) when the cursor is on the margin to move the cursor beyond the margin.

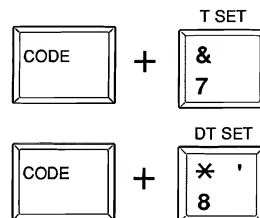
2. Press **CODE** + **L MAR** (**4**) to set the new left margin, or **CODE** + **R MAR** (**5**) to set the new right margin. The L or R symbol on the scale moves accordingly.
  - If you mistakenly press **CODE** + **MREL** when there is no need to modify the margins, press **CANCEL** to resume normal editing.
  - The minimum distance between margins is two inches. The maximum distance is nine inches, the maximum printing width of the machine. The equivalent number of characters depends upon the pitch, as indicated in the following table:

Pitch	Number of Characters Between Margins	
	Minimum	Maximum
10 (Pica)	20	90
12 (Elite)	24	108
15 (Micron)	30	135

## Tabs and Decimal Tabs

Tabs allow you to type text or align columns of text at preset positions. Decimal tabs align a column of numbers at their decimal points instead of at the first character. The scale indicates these two types of tabs with T for normal tabs, and D for decimal tabs.

### Setting Tabs

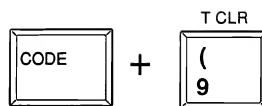


When the power is first turned on, there are no tab stops set. You can add or change tab stops at any time — before, while, or after typing the text.

1. Move the cursor to the position where you want a tab.
2. Press **CODE** + **TSET** (**7**) to set a normal tab stop, or **CODE** + **DTSET** (**8**) to set a decimal tab stop at the current cursor position. The corresponding symbol T or D appears on the scale. Up to 30 tab and decimal tab stops can be set. Setting a tab stop where you already had a decimal tab stop replaces the D with a T and vice-versa.

Since the pitch determines the actual position on the printed page, the columns may appear at undesired positions if you change the pitch of a table formatted with tabs and decimal tabs.

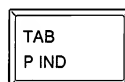
## Clearing Tabs



1. To clear a single tab or decimal tab, move the cursor to that position and press **CODE** + **T CLR (9)**.
2. To clear all tabs and decimal tabs, hold down **CODE** + **T CLR (9)** until the following message appears:

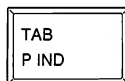
All tabs cleared.

## Using Tabs



1. Press **TAB** to move the cursor to the next tab stop to the right. A "→" symbol appears on the screen just before the new text cursor position to remind you that there is now a tab in the text.
  - If there is no tab stop to the right, the cursor moves to the right margin.
2. Type your text.
3. Repeat the above procedure for each column in your table.

## Using Decimal Tabs



When you move the cursor to a decimal tab stop by pressing **TAB**, the cursor remains fixed at the tab stop position. Each character that you type appears to the left of the tab stop. Once you type the decimal point, it appears at the tab stop, and the cursor returns to normal operation.

1. Press **TAB** to move the cursor to the next decimal tab stop to the right. A "→" symbol appears on the screen just before the new text cursor position to remind you that there is now a tab in the text.
  - If there is no tab stop to the right, the cursor moves to the right margin.
2. Type the number.
3. Repeat the above procedure for each column in your table.

The cursor returns to normal operation if you press **RETURN** or **TAB**.

## Inserting Tabs

As always, you can type your text first and align the text with tabs or decimal tabs later.

1. If the **INS** indicator is off, press **CODE** + **INSERT (I)** to switch to the Insert mode.

- If the Insert mode is not on, **TAB** will just move the cursor to the next tab stop without aligning the text.
2. Position the cursor on the beginning of the word that you want to align. Press **TAB**. The word processor adjusts the text to fit the margins and page length.

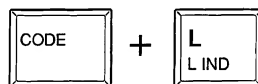
## Removing Tabs

If you change your mind, you can also remove a tab or decimal tab.

1. Position the cursor just after the tab symbol "→" on the screen.
2. Press **BACKSPACE** or **CORRECT**. The word processor adjusts the text to fit the margins and page length.

## Indenting

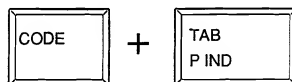
### Line Indent



Pressing **CODE** + **L IND** (**L**) is the same as typing five permanent spaces. (See "Spaces and Permanent Spaces," page 50.) The primary application is indenting the first line of a paragraph.

- If the word processor is not in the Insert mode, these five spaces overwrite the five characters at the cursor location.

### Paragraph Indent



The Paragraph Indent function can be considered as a temporary left margin. Unlike Line Indent, the Paragraph Indent function indents text to a tab stop. When you turn off the Paragraph Indent mode, the cursor returns to the original left margin.

To indent a paragraph:

1. Set the tabs you need for the indented paragraph(s). (See "Tabs and Decimal Tabs," page 34.)
  - If you will be indenting paragraphs to different positions, it is a good idea to set all the tabs at the same time.
2. If you have text, such as a section number, that you wish outside the indented block, type that text.
3. Press **CODE** + **P IND** (**TAB**) as many times as necessary to move the cursor to the tab setting where you want the new temporary margin. A "→" symbol appears just before the new cursor position to remind you that the text that follows will be indented.
  - If you change your mind, use **BACKSPACE** or **CORRECT** to remove the paragraph indent symbol "→".

4. Type the text of the paragraph. If you press **RETURN** or type a space or hyphen in the hot zone, the cursor returns to the paragraph indent position on the next line, and not to the left margin.

## Returning to the True Left Margin

At the end of the indented paragraph, simply press **CODE** + **IND CLR** (**RETURN**) to return to the original left margin. The word processor marks the end of the indented paragraph with a "¶" symbol to indicate that you are out of the Paragraph Indent mode.

- You can also indent a paragraph after it has been typed. Position the cursor on the first character of the paragraph to be indented and press **CODE** + **PIND** (**TAB**) to reposition it at the tab position. At the end of the indented block, press **CODE** + **IND CLR** to return to the original left margin.

## Right Margin Flush

STYLE	BLOCK	CTR/RMF	GRAMMAR1	GRAMMAR2	SEARCH	FORM	PAGE	PRINT
		CENTERING						
		RIGHT MARGIN FLUSH						

Most typing begins at or near the left margin. The Right Margin Flush function aligns the last character in a line of text with the right margin. This is used, for example, to type the date of a letter.

1. If you have not yet typed the text to be aligned with the right margin, skip this step. If you want to align text that has been already typed, position the cursor on the first character of that text.
2. Press **MENU** to display the function menu.
3. Select **CTR/RMF** and press **RETURN** or **↓**.
4. Select **RIGHT MARGIN FLUSH** and press **RETURN**. The cursor moves to the right margin. A Right Margin Flush symbol "↔" appears on the line. If the text has already been typed, it is aligned flush with the right margin (any blank space at the end of the line will be cut off) and you can skip step 5.

Short cut: Instead of steps 2, 3, and 4, press **CODE** + **R**.

5. Type the text. The cursor does not move, but each character you type shifts the previous characters to the left, so the last character always remains at the right margin.
6. Press **RETURN** when you have typed the entire line. The cursor moves to the beginning of the next line.

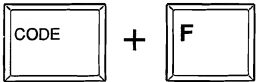
## Undoing Right Margin Flush

To undo an existing Right Margin Flush, simply delete the Right Margin Flush symbol "↔" using **BACKSPACE** or **CORRECT**.

# Centering

The Centering function is used to center a line as you type or to center a line that you previously typed. You can center text either between margins or tab stops.

## Centering Between Margins



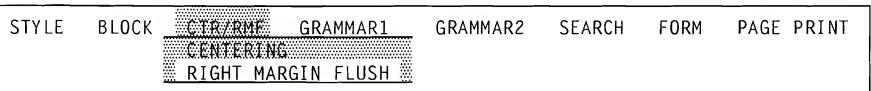
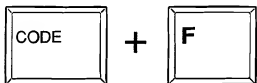
When you center between margins, the position of the cursor on the line does not matter.

1. Press **MENU** to display the function menu.
2. Select CTR/RMF and press **RETURN** or **↓**.
3. Select CENTERING and press **RETURN**. The cursor moves to the center point between your margins. The symbol for centering between margins "H" appears on the line. If the text has already been typed, it is centered and you can skip step 4.

Short cut: Instead of steps 1, 2 and 3, press **CODE** + **F**.

4. Type the text.
5. Press **RETURN** to finish the Centering operation.

## Centering Between Tabs



1. Press **TAB** as many times as necessary to reach the desired tab position (the position that will become the left end of the centering range).
2. Press **MENU** to display the function menu.
3. Select CTR/RMF and press **RETURN** or **↓**.
4. Select CENTERING and press **RETURN**. The cursor moves to the center point between the tab position where the cursor was in step 1 and the next tab to the right — or the right margin if there are no more tabs set. A Centering symbol "H" appears on the line. If the text has already been typed, it is centered and you can skip step 5.

Short cut: Instead of steps 2, 3, and 4, press **CODE** + **F**.

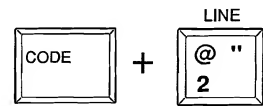


5. Type the text.
6. Press **RETURN** to finish the Centering operation, or **TAB** to move to the next tab.
  - Centering between a tab and the right margin is possible, but not between the left margin and a tab.
  - Centering between a tab and a decimal tab is not possible.

## Undoing Centering

While you are still in Centering mode, press **CANCEL** to exit the mode. To bring centered text back flush with the left limit of the centering range, position the cursor just after the centering symbol "H" or "H" and press **BACKSPACE** or **CORRECT** to delete the symbol.

## Line Spacing



The word processor is set to single line spacing when you turn on the machine. To change the line spacing, press **CODE** + **LINE** (**2**) until the setting you want appears next to the **L.SP** indicator on the Status Line. The line spacing settings appear in the following order:

L.SP: 1.0 → 1.5 → 2.0 → 1.0

Line spacing	Lines per Inch
1.0 (single)	6
1.5 (one-and-half)	4
2.0 (double)	3

You can change the line spacing anywhere in your document.

To keep the maximum amount of text in view at all times, the word processor always uses single spacing on the screen. The number next to the **L** indicator, however, reflects the actual line count. If you are at the top of your text with the cursor on line 1, for example, each time that you press **L**, the number that appears next to the **L** indicator depends on the line spacing as follows:

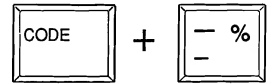
Line Spacing	Line Numbers
1.0	1, 2, 3, 4, 5, 6, 7,.....
1.5	1, 2 (2.5), 4, 5 (5.5), 7, 8 (8.5), 10,.....
2.0	1, 3, 5, 7, 9, 11, 13,.....

# Hyphenation

## Soft Hyphen

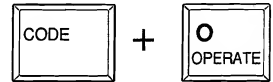
Typing a hyphen ( - ) in the hot zone ends the line and sends the cursor to the next line. This becomes a "soft hyphen," displayed as a dotted hyphen, and will disappear if subsequent revisions or re-formatting — a change of margins, for instance — moves the word out of the hot zone.

## Permanent Hyphen



A permanent hyphen, entered with **CODE** + **[- %]**, is for those words that always require a hyphen (mother-in-law, for example). In the hot zone, a permanent hyphen does not send the cursor to the next line. Outside the hot zone, all hyphens are permanent, so it is not necessary to use **CODE**.

## Justification



The Justify function adjusts the text so that every complete line is aligned with both left and right margins.

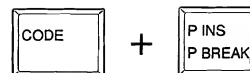
### Entering Justified Text

1. Press **CODE** + **OPERATE (O)** to turn on the **JST** indicator on the Status Line, and then start typing.
2. When you type a space or hyphen in the hot zone, the cursor moves to the next line and the current line is justified.
3. To resume normal typing, press **CODE** + **OPERATE (O)** again to turn the **JST** indicator off.

### Justifying Existing Text

1. Position the cursor at the first paragraph that you want to justify.
2. Press **CODE** + **OPERATE** to turn the **JST** indicator on. An "⌵" symbol appears in the first column of the first line of the paragraph and the text is justified from this line to the next "⌵" symbol (if any exists) or to the end of the document. If your document contains many "⌵" symbols you will need to repeat these steps to justify all of the text.

## Page Breaks



The text is always automatically formatted so that a maximum number of lines can fit on one page. The word processor automatically divides your text into pages according to the format set on your paper size settings. (See "Paper Size Settings," page 72.) Each time you want to start a new page, press **CODE** + **P BREAK** (**P INS**). A Page Break symbol "↓" indicates that point, and the cursor will move to the next line. The Page Count (**P** indicator) is incremented and the Line Count (**L** indicator) restarts from 1. If you change your mind, you can eliminate the page break by deleting the Page Break symbol using **BACKSPACE** or **CORRECT**. You cannot delete a page break symbol that has been inserted by the system.

## Positioning Text on a Page

### Horizontal Positioning

The display indicates the left margin and all other horizontal distances in terms of columns. On paper, however, the width of these columns depends on the selected pitch. This machine offers three pitch settings:

- 10 pitch (pica)
- 12 pitch (elite)
- 15 pitch (micron)

### Screen Width and Paper Width

The distance between the left and right margins must be smaller than the paper width. Suppose your paper is 8.5 inches wide and you are using Pica pitch. You can fit a maximum of 85 characters on one line. The distance between margins should therefore be smaller than 85 columns on the screen (check the **COL** indicator on the Status Line). The following table indicates the maximum distance between margins for letter-size paper:

Width	Maximum Characters Between Margins		
	10 (PICA)	12 (ELITE)	15 (MICRON)
Letter Size			
8.5 inch	85	102	127

### Vertical Positioning

Just as the word processor breaks the lines of text to fit within the specified left and right margins, it also breaks your text into pages according to the line spacing, top and bottom margins, and other layout settings that you have specified.

# Paper Size Settings

STYLE	BLOCK	CTR/RMF	GRAMMAR1	GRAMMAR2	SEARCH	FORM	PAGE	PRINT
						PAPER SIZE		
						HEADER		
						FOOTER		
						SCALE LINE ON/OFF		
						DUAL SCREEN		
						CHANGE SCREEN		

The Paper Size function allows you to specify all vertical layout settings except line spacing. This feature is used to adjust the top and bottom margins.

- 1. Press **MENU** to display the function menu.
- 2. Select FORM and press **RETURN** or **↓**.
- 3. Select PAPER SIZE and press **RETURN**. The following screen appears.

XXXXXXXX	P:XX	L:XXX	COL:XXX	PITCH:XX	L.SP:X.X	KB:XX
				TOP MARGIN	X	
				TOP SPACE	X	▼ HEADER X
				TEXT AREA	XXX	
				BOTTOM SPACE	X	
				BOTTOM MARGIN	X	▼ FOOTER X
Set each item and press ↑, ↓. Press RETURN to finish.						

This screen allows you to set the options described in the table below.

Indication	Meaning
PAPER SIZE	The total length of the paper. The default, 66 lines, is suitable for letter-size paper.
TOP MARGIN	The distance between the top edge of the paper and the header (if present) or the top of the text (when there is no header). The default is 6 lines, which is one inch.
HEADER	An optional running header. (See "Headers and Footers," page 73.)
TOP SPACE	The distance between the header (if present) and the first line of the text. If you stored a header, you will want to enter a number for this selection.
TEXT AREA	The number of lines reserved for the body of the text.
BOTTOM SPACE	The distance between the last line of the text and the footer (if present). If you stored a footer, you will want to enter a number for this selection.
FOOTER	An optional running footer. (See "Headers and Footers," page 73.)
BOTTOM MARGIN	The distance between the footer (if present) or the last line of the text and the bottom edge of the paper. The default is 6 lines, which is one inch.

The text cursor cycles through only five of the eight fields on the screen. HEADER, FOOTER and TEXT AREA are updated by the machine. The numbers for HEADER and FOOTER are set to 1 line if you have stored a header or footer, or 0 lines if there is no header or footer. The length of the TEXT AREA is defined as the PAPER SIZE less the lines reserved for TOP MARGIN, HEADER, TOP SPACE, BOTTOM SPACE, FOOTER, and BOTTOM MARGIN.

4. Press or until you reach the setting that you want to change.
5. Type the new value and press or to move to the next setting that you want to change. Notice how the Text Area value changes to accommodate your selections.
6. When you have entered all the desired changes, press to save the new settings. Press if you do not want to save the new settings.

**Your text will be divided into pages according to the settings for the paper size. If you want to begin a new page before reaching the line set by the paper size setting, simply press + (PINS).**

## Headers and Footers

STYLE	BLOCK	CTR/RMF	GRAMMAR1	GRAMMAR2	SEARCH		
						PAPER SIZE HEADER FOOTER SCALE LINE ON/OFF DUAL SCREEN CHANGE SCREEN	

STYLE	BLOCK	CTR/RMF	GRAMMAR1	GRAMMAR2	SEARCH		
						PAPER SIZE HEADER FOOTER SCALE LINE ON/OFF DUAL SCREEN CHANGE SCREEN	

A header is a line of text, often including a page number, that is printed at the top of every page. A footer is a similar line printed at the bottom of every page.

1. Press to display the function menu.
2. Select FORM and press or .
3. Select HEADER or FOOTER and press .
4. Type the text for the header or footer and press . The text cannot exceed one line. The text disappears from the screen when you press but it will be printed when you print the file. Press at this step to return to the normal mode without saving the header or footer in memory.

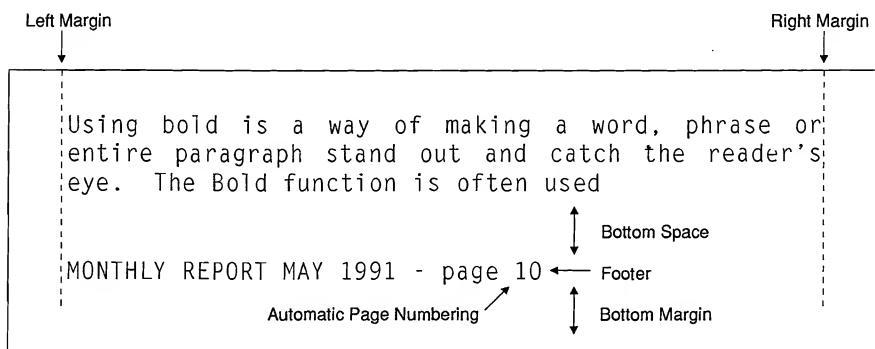
## Page Numbering

To include page numbering in a header or footer, type the first page number enclosed in double quotes; this number will be incremented for each page when the document is printed. (The double quotes are not printed.) You can begin with number 1, or with a different number if the document is part of a larger document. For example, if the document is the second chapter of a book, and Chapter 1 ended on page 22, enter "23" as the first page number of Chapter 2. Any number up to four digits in length (9999) is accepted.

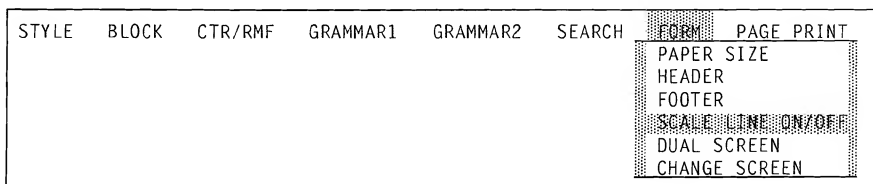
- Example of footer with page numbering:

MONTHLY REPORT MAY 1991 - page "10"

- Bold and underlined text can also be used in a header or footer. You can also center the header or footer or make it flush with the right margin.



## Turning Off the Scale



You can "turn off" the scale line — that is, remove it from the screen — to make room for one additional line of text.

1. Press **MENU** to display the function menu.
2. Select **FORM** and press **RETURN** or **↓**.
3. Select **SCALE LINE ON/OFF** and press **RETURN**. You are back to the Input/Edit screen. If the scale was displayed, it is now removed, and vice-versa.

## Input/Edit Screen with the Scale On

```

XXXXXXXX P:XX L:XXX COL:XXX PITCH:XX L.SP:X.X KB:XX
0.....L.....2.....3.....4.....5.....6.....H7...R...8.....
E          B

```

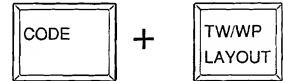
## Input/Edit Screen with the Scale Off

```

XXXXXXXX P:XX L:XXX COL:XXX PITCH:XX L.SP:X.X KB:XX
E          B

```

## Page Layout View



When a document is complete, you may want to check the layout in order to make final formatting adjustments. The word processor provides a quick method for checking the layout of a document.

The Layout Display function displays three pages on the screen at one time. The size of the pages is scaled down so that a character is reduced to a dot on the screen. You will not, of course, be able to read the text, but you can get a general idea of the layout.

1. From the Input/Edit screen, press **CODE** + **LAYOUT** (**TW/WP**) to display the LAYOUT screen. This screen shows three pages of your document in reduced scale, starting with page 1, 4, 7, etc.

The number of each page appears in normal scale in the upper-left corner of each page. The cursor on the LAYOUT screen is used to select a page by highlighting its page number. Page layout information also appears.

```

<< LAYOUT >>
TOP MARGIN      6
HEADER          0
TOP SPACE       0
TEXT AREA      54
BOTTOM SPACE    0
FOOTER          0
BOTTOM MARGIN   6

```

1

Press D to show COLUMN/NORMAL

If the double columns printing option is set to YES, the document appears on the LAYOUT screen in double columns. Press D to switch from double to single column display or back again.

2. To display the next three pages, press **↓**, or position the cursor on the right hand page and press **→**.
3. To display the previous three pages, press **↑**, or position the cursor on the left hand page and press **←**.
4. To return to the Input/Edit screen, press **RETURN**, **CANCEL**, or **CODE** + **LAYOUT** (**TW/WR**). The page where the cursor was positioned on the LAYOUT screen appears in the normal display. (If you see a page where a correction is needed, you can conveniently make the correction by positioning the cursor on that page before you return to the Input/Edit screen.)

## Dual-Screen Display

The Dual Screen function allows you to work on two documents at the same time. This function can be used to compare two documents, or copy text from one file to the other. (See "Copying a Block between Two Files," page 58.)

### Displaying a Second Document

STYLE	BLOCK	CTR/RMF	GRAMMAR1	GRAMMAR2	SEARCH	<b>FORM</b>	PAGE PRINT
						PAPER SIZE	
						HEADER	
						FOOTER	
						SCALE LINE ON/OFF	
						<b>DUAL SCREEN</b>	
						CHANGE SCREEN	

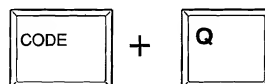
1. From the Input/Edit screen, press **MENU** to display the function menu.
2. Select **FORM** and press **RETURN** or **↓**.
3. Select **DUAL SCREEN** and press **RETURN**. The Input/Edit screen is reduced to its upper half, and the WP INDEX screen appears on the lower half of the display. If you cannot find the file you want, replace the disk with one that contains the file. The WP INDEX screen appears again.
4. Select a text file as you would from the usual WP INDEX screen and press **RETURN**. The text of this file is now displayed in the lower half of the screen.



17M 0.....L.....2.....3.....4.....5.....6.....H7...R...8.....	XXXXXXXX P:XX L:XXX COL:XXX PITCH:XX L.SP:X,X KB:XX Text of the first file
17M 0.....L.....2.....3.....4.....5.....6.....H7...R...8.....	XXXXXXXX P:XX L:XXX COL:XXX PITCH:XX L.SP:X,X KB:XX Text of the second file

5. You can now edit the document on the lower half of the screen in exactly the same way as on the usual, full-size Input/Edit screen. The only difference is that the text area is smaller. You can increase the text area by one line using the Scale Line On/Off function.

### Switching to the Other Document



STYLE	BLOCK	CTR/RMF	GRAMMAR1	GRAMMAR2	SEARCH	FORM	PAGE	PRINT
						PAPER SIZE HEADER FOOTER SCALE LINE ON/OFF DUAL SCREEN CHANGE SCREEN		

1. Press **MENU** to display the function menu.
2. Select FORM and press **RETURN** or **↓**.
3. Select CHANGE SCREEN and press **RETURN**. The cursor immediately moves to the text displayed on the upper half if it was in the lower half, and vice-versa.

Short cut: Instead of steps 1, 2, and 3, press **CODE** + **Q**.

### Returning to a Single Input/Edit Screen

To return to the single Input/Edit screen, you must save one of the two files that are displayed on the dual screen.

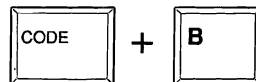
1. Use the Change Screen function described above to position the cursor on the document that you want to save.
2. Press **FILE** and proceed to save or abandon the document. The document that was not selected for saving is now displayed on a full-sized Input/Edit screen.

# Character Style Options

You can enhance the appearance of your document with bold face type, underlining, or by "expanding" the text by inserting a blank space between each character. Any combination of these three effects is also possible.

You can turn on the Bold, Underline, or Expand functions before you type or add these effects to a portion of text already typed.

## Bold

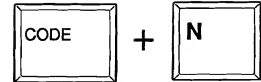


STYLE	BLOCK	CTR/RMF	GRAMMAR1	GRAMMAR2	SEARCH	FORM	PAGE PRINT
BOLD	OFF	(ON)					
UNDERLINE	OFF	(CNT) (WRD)					
EXPAND	OFF	(ON)					

1. If you want to turn on the Bold function before typing, skip this step. If you want to add bold to a portion of text already typed, position the cursor at the beginning of that portion.
2. Press **MENU** to display the function menu.
3. Select STYLE and press **RETURN** or **↓**.
4. Select BOLD.
5. Use **SPACE BAR** to turn on the Bold function.
6. Press **RETURN**. The **BLD** indicator on the Status Line is now ON.  
Short cut: Instead of steps 2, 3, 4, 5, and 6, press **CODE** + **B** to turn the Bold function on or off.
7. The text you now type, or the text you mark by moving the cursor right and down, appears in bold. If you move the cursor past the desired position, simply move the cursor back to unmark.
8. To return to normal typing, repeat steps 2, 3, 4, and use **SPACE BAR** to turn the Bold function off, or press **CODE** + **B**.

To remove bold from the characters, position the cursor directly after the last bold character, turn on the Bold function, and move the cursor left and up. Turn off the Bold function to stop removing bold.

## Underline



STYLE	BLOCK	CTR/RMF	GRAMMAR1	GRAMMAR2	SEARCH	FORM	PAGE	PRINT
BOLD	OFF	(ON)						
UNDERLINE	OFF	(CNT) (WRD)						
EXPAND	OFF	(ON)						

1. If you want to turn on the Underline function before typing, skip this step. If you want to underline a portion of text already typed, position the cursor at the beginning of that portion.
  2. Press **MENU** to display the function menu.
  3. Select STYLE and press **RETURN** or **↓**.
  4. Select UNDERLINE.
  5. Use **SPACE BAR** to select CNT (Continuous Underlining) or WRD (Word Underlining).
  6. Press **RETURN**. The **CNT** or **WRD** indicator on the Status Line is now ON.  
Short cut: Instead of steps 2, 3, 4, 5, and 6, press **CODE** + **N** to turn on the CNT or WRD Underline function.  
  
If you select Continuous Underlining, all text will be underlined, including blank spaces. With word underlining, blank spaces are not underlined.
  7. The text you now type, or the text you mark by moving the cursor right and down, is underlined. If you move the cursor past the desired position, simply move the cursor back to remove the underline.
  8. To return to normal typing, repeat steps 2, 3, 4, and use **SPACE BAR** to turn off the Underline function, or press **CODE** + **N**.
- To remove the underlining, position the cursor directly after the last underlined character, select the same option (CNT or WRD), and move the cursor left and up. Turn the Underline function off to stop removing the underlining.

## Expanded Text

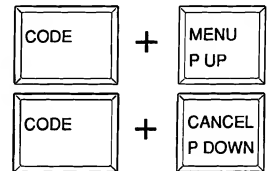
STYLE	BLOCK	CTR/RMF	GRAMMAR1	GRAMMAR2	SEARCH	FORM	PAGE	PRINT
BOLD	OFF	(ON)						
UNDERLINE	OFF	(CNT) (WRD)						
EXPAND	OFF	(ON)						

The Expand function can be used only while typing. You cannot use it for text that you have already typed.

1. Press **MENU** to display the function menu.
2. Select STYLE and press **RETURN** or **↓**.

3. Select EXPAND.
  4. Use **[SPACE BAR]** to turn on the Expand function.
  5. Press **[RETURN]**. The **EXP** indicator on the Status Line is now ON.
  6. The text you now type is expanded—that is, a permanent space is inserted after each character. (See also "Spaces and Permanent Spaces," page 50.)
  7. To return to normal typing, repeat steps 1, 2, 3, and use **[SPACE BAR]** to turn off the Expand function.
- The permanent spaces inserted with the Expand function cannot be removed automatically. To undo the expand format, you must delete the spaces one by one using **[BACKSPACE]** or **[CORRECT]**.

## Superscripts and Subscripts



The word processor allows you to enter and print superscript (slightly above the normal text) and subscript (slightly below the normal text) characters.

Press **[CODE] + [P DOWN] ([CANCEL])** to enter a superscript character or **[CODE] + [P UP] ([MENU])** to enter a subscript character. When you press these keys, a half-cursor replaces the normal cursor (upper half for superscript and lower half for subscript). The character you typed appears in superscript or subscript. After you type the character and return to the normal mode, the normal cursor reappears.

The word processor prints superscripts and subscripts the same distance (1/12 inch) above or below the line, regardless of the current line spacing.

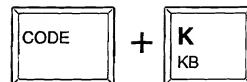
Example: To type "e=mc<sup>2</sup>":

1. Type "e=mc".
2. Press **[CODE] + [P DOWN] ([CANCEL])**.
3. Type "2".
4. Press **[CODE] + [P UP] ([MENU])**.

To enter subscripts, proceed in the same way as above, but reverse the **[CODE] + [P UP]** and **[CODE] + [P DOWN]** keys.




Each pair of keys (**[CODE] + [P UP]** and **[CODE] + [P DOWN]**) cancels the other, and the pairs must always be used in combination.

## Keyboard Setting



The display on this word processor supports all European languages written with the Roman alphabet, as well as Greek and mathematical symbols. To print English text, you need only the standard daisy wheel which comes with your machine. Various styles and pitches are available. (See "Accessory Order Form.")

However, to print accented characters, or text requiring mathematical or Greek symbols, you need the corresponding daisy wheel(s).

While typing your text, you must specify which keyboard you are using in order for the characters to be properly displayed on the screen. The keyboard is set to I when you turn on the machine. To change the keyboard setting, press  +  () one or more times until the setting you want appears next to the **KB** indicator on the Status Line. The keyboard settings appear in the following order:

**KB:** I → II → III → I

Keyboard Selection	Use
I (Standard)	For English text.
II (International)	For European languages using Roman alphabet.
III (Symbol)	For Greek letters and mathematical symbols.

- For more details regarding the characters available in each keyboard, see "Character Keys," page 7.

The word processor remembers which keyboard you selected when typing your text and asks you to insert the corresponding daisy wheel when you print your document. While typing or editing your text, you do not need to change the daisy wheel.

## Special Characters

The special characters are those marked in green on your keyboard (for example, "<"). To enter such a character, press  + the character key.

If a green character appears on the right of a key (for example "ß"), you must switch to the international keyboard setting (KB II) to type the character.

## Accents ("Dead" Keys)

You can type the accented characters of such languages as French, German, and Spanish using the international (KB II) or symbol (KB III) keyboard setting. These keyboards provide accent keys which are "dead"—that is, the cursor does not move after you type the accent. The next character you type appears under the accent.

To print accented characters, you must have the appropriate daisy wheel. (See "Changing Daisy Wheels," page 15 and "Keyboard Setting," page 38.)

1. Press **CODE** + **KB** (**K**) to switch the **KB** indicator on the Status Line to II or III.
2. Type the accent. (You can type a second accent if you wish.) The accent appears next to the **DEAD** indicator on the Status Line. If you make a mistake, press **CANCEL** or **CORRECT**.
3. Type the base character. The character with its accent appears in the text area.

With some combinations of accents and base characters (such as Y and ^), the base character appears alone and in reverse image in the text area. If you then move the cursor to the base character, the accent reappears next to the **DEAD** indicator.

To delete an accented character, proceed as you would for a normal character (use **BACKSPACE** or **CORRECT**).

## Superimposed Characters

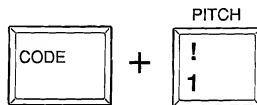
Superimposed characters are characters created by typing one character over another. For example, "ø" is created by typing "O" and "/"; "¥" is created by typing "Y" and "=".

1. Type the first character. Although you can enter the characters in either order, start with the one you want to appear on the screen.
2. Press **CODE** + **BACKSPACE**. The first character appears now in reverse image, and the cursor moves next to the **P BS** indicator on the Status Line.
3. Type the second character on the Status Line. When you type the second character, the cursor moves back to the text area and you can resume normal typing.

If you then move the cursor to the first character (press **←** at this point, for example), the second character reappears next to the **P BS** indicator.

To delete superimposed characters, simply delete the first character (use **BACKSPACE** or **CORRECT**).

## Pitch Setting



The pitch is automatically set to 10 when the power is turned on. To change the pitch setting, press **CODE** + **PITCH** (**1**) one or more times until the setting you want appears next to the **PITCH** indicator on the Status Line. The pitch settings appear in the following order:

PITCH: 10 → 12 → 15 → 10

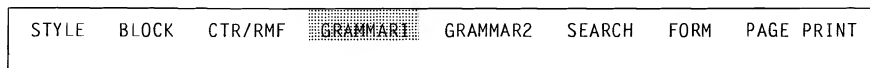
When the pitch is changed, a format symbol "F" appears in the first column of the first line of that paragraph. The text below the format symbol is automatically reformatted.

# Special Word Processing Tools

## Introduction

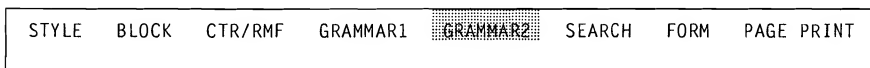
This machine provides several special tools that help you create quality documents quickly and efficiently. These tools are provided on the GRAMMAR1 and GRAMMAR2 submenus.

### "GRAMMAR 1" Functions



The GRAMMAR1 submenu provides functions that detect errors in your document. From the GRAMMAR1 submenu, you can check for spelling and punctuation errors and for "redundant words," that is, words you have mistakenly typed twice. Each function provides an easy method for correcting such errors. The GRAMMAR1 submenu also provides functions for creating and using a User Dictionary. This is a list of words that the Spell Checker uses along with its own dictionary when checking your document for spelling errors.

### "GRAMMAR 2" Functions



The GRAMMAR2 submenu provides functions that improve the style of your documents and help you type faster. It includes the optional Thesaurus function, which provides synonyms for specified words, and the Word Count function, which helps you determine if you have used certain words too frequently.

## Checking Spelling

The Spell Checker is a powerful tool for increasing your proofreading efficiency. The Spell Checker uses a built-in dictionary of about 70,000 English words. When checking your text, the Spell Checker compares each word with the contents of the dictionary. If a word is not found in the dictionary, the machine assumes that the word in question is misspelled and warns you.

The built-in dictionary contains only standard English words and will consider words like brand names, people's names, or foreign language words as misspelled words, even if those words are perfectly correct. If you frequently use such words in your document, you should create a "User Dictionary" and store those words in that dictionary. The user dictionary is kept in the memory for as long as the power is on, but you may save it on disk. When a word cannot be found in the built-in dictionary, the Spell Checker will scan the user dictionary.

When a word cannot be found in either dictionary, the Spell Checker gives you a menu of options:

Option 1: You may IGNORE the warning and keep the suspect word unchanged.

Option 2: You may ask for SUGGESTIONS. In this case, the Spell Checker will supply possible replacement Words for the suspect word.

Option 3: You may directly RETYPE the word correctly. This option is used when the error is evident and easy to correct, or when the system cannot provide the correct replacement.

Option 4: You may ADD the suspect word to the user dictionary. This is useful when the suspect word, although correct, is not a standard English word. Once the word is stored in the user dictionary, the Spell Checker will not warn you the next time the same word is found.

## Checking for Redundancy

The Spell Checker also detects redundant words, that is, words you mistakenly typed twice. When it detects a redundancy, it gives you two options: IGNORE and ERASE SECOND WORD. Select IGNORE to ignore the warning and keep the repeated word in the text. Select ERASE SECOND WORD to erase the second word.

### Important Notice

This system is not a replacement for careful proofreading of your documents. It has no way of knowing, for example, whether words are missing or whether a given word is appropriate in the current context. If you type "teh" instead of "the", the Spell Checker alerts you because "teh" is not a valid English word, but if you type "one" instead of "on", the Spell Checker does not detect a mistake.

## Turning On the Spell Checker

STYLE	BLOCK	CTR/RMF	GRAMMAR1	GRAMMAR2	SEARCH	FORM	PAGE	PRINT
			GRAMMAR CHECK					
			GRAMMAR CHECK SET MENU					
			USER DICTIONARY MAINTENANCE					
			USER DICTIONARY LOAD					
			USER DICTIONARY SAVE					

1. Press **MENU** to display the function menu.
2. Select GRAMMAR1 and press **RETURN** or **↓** to display the submenu.
3. Select GRAMMAR CHECK SET MENU and press **RETURN**. The following menu appears:



<< GrammarCheck SET MENU >>

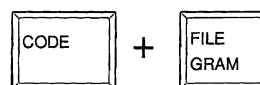
CHECK ALL WORDS	
SPELL CHECK	ON
PUNCTUATION ALERT	OFF

Select item and press SPACE to change setting. Press RETURN to finish.

4. Select SPELL CHECK and press **[SPACE BAR]** to switch the function on if it is not on already. You can also turn on the Punctuation Alert if you want to check punctuation at the same time. See "Checking Punctuation," page 91, for more information. (At least one of the functions must be on.)
5. Press **[RETURN]** to save the new setting, or press **[CANCEL]** to return to the Input/Edit screen without saving them.

There are two ways to use the Spell Checker. You can check existing text, or you can check words as you type them.

## Checking Existing Text



You can use the Spell Checker to check all of the text you have typed, or start checking at any point in the document. The checking starts at the word where the cursor is currently located and continues to the end of the document.

STYLE	BLOCK	CTR/RMF	GRAMMAR1	GRAMMAR2	SEARCH	FORM	PAGE	PRINT
			GRAMMAR CHECK					
			GRAMMAR CHECK SET MENU					
			USER DICTIONARY MAINTENANCE					
			USER DICTIONARY LOAD					
			USER DICTIONARY SAVE					

1. Position the cursor at the point in the document where you want to start checking. For example, if you want to check the entire document, position the cursor over the first word of the document.
2. Press **[MENU]** to display the function menu.
3. Select GRAMMAR1 and press **[RETURN]** or **[↓]** to display the submenu.
4. Select GRAMMAR CHECK and press **[RETURN]**. The following menu appears:

Use cursor to select. Press RETURN.

ALL	ONE WORD
-----	----------

Short cut: Instead of steps 2, 3, and 4, press **[CODE] + [GRAM] ([FILE])**.

5. To check the entire document, select ALL and press **[RETURN]**. The Spell Checker starts scanning your text for misspelled words and displays the following message:

Checking...

When a suspect or redundant word is found, the above message disappears and is replaced with a menu of options. The suspect word or redundant word appears in reverse image in the text.

Example 1:

You have typed "The quick broen fox..."  
("broen" is suspect)

The quick **broen** fox... GP

Use cursor to select. Press RETURN.

SUSPECT WORD: broen

►MENU◀ **IGNORE** SUGGESTION RETYPE ADD

Select an option and press **RETURN**.

- If you select **IGNORE**: the system starts searching for the next suspect word. The word "broen" will not be corrected.
- If you select **SUGGESTION**: a menu of possible replacement words appears.

The quick **broen** fox... GP

Use cursor to select. Press RETURN.

SUSPECT WORD: broen

SUGGESTIONS : **brown** broken brawn bruin brain brine borne boron

Select the correct word and press **RETURN**. The correct word replaces the wrong one in the text. If the correct word does not appear in the suggestion menu, simply press **CANCEL** to return to the first menu and select **RETYPE**.

- If you select **RETYPE**: an input area appears where you can type the correct word:

The quick **broen** fox... GP

Type word and press RETURN.

SUSPECT WORD: broen

WORD:

At this point you have two additional options. You can type the full correct word and press **RETURN**. You can also press **↓**, which displays the suspect word in the input area so that you can correct it in a few keystrokes. Press **RETURN** when the word is corrected.

- If you select ADD: the suspect word is added to the user dictionary. From now on, it will not be considered suspect. The following message appears:

Word added to user dictionary.

If you add words to the user dictionary, you may want to save the user dictionary onto a disk before turning off the power. (See "Saving the User Dictionary," page 88.)

Example 2:

You have typed "The quick brown fox fox..."  
(The second "fox" is redundant)

GR

The quick brown fox fox..

---

Use cursor to select. Press RETURN

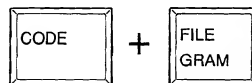
REDUNDANT WORD: fox

►MENU◀ IGNORE ERASE SECOND WORD

Select an option and press RETURN.

- If you select IGNORE: the word remains in the text.
- If you select ERASE SECOND WORD: the word is deleted.

## Checking Each Word While Typing



To check words as you type them, position the cursor where you will type. Then, follow the instructions for "Checking Existing Text," steps 2 through 4. Select ONE WORD, and press RETURN. The **GR** indicator appears on the Status Line, and all words you type are checked for spelling errors and redundancy. If the Spell Checker finds an error, it interrupts your typing and displays the same menu options as when checking existing text.

You can check one word or leave the Spell Checker on to check all the text you type. To turn the Spell Checker off, press CODE + GRAM (FILE).

## The User Dictionary

A user dictionary is a list of words the Spell Checker uses, in addition to its own dictionary, when checking spelling in your document. A user dictionary consists of names, special terminology, and other words you use in your documents that do not appear in the Spell Checker's standard dictionary.

A user dictionary is created automatically the first time you select the "ADD" option when the Spell Checker has stopped at a word it thinks is incorrect. Each time you select ADD, the word in question is added to your user dictionary. The dictionary is held in the memory of the machine for as long as the machine is turned on. You can edit the user dictionary in memory directly.

Like all data in the machine's memory, the contents of the user dictionary is lost when you turn off the power. However, the contents can be saved on disk into a file, and reloaded into the memory whenever you want to use the same user dictionary. Each disk can hold only one user dictionary. If you save a user dictionary onto a disk that already contains a user dictionary, the dictionary previously on the disk will be overwritten.

Similarly, the memory of the machine can hold only one dictionary. If you create a dictionary in the memory, and then load a dictionary from a disk, the dictionary currently in the memory will be overwritten by the loaded dictionary.

## Saving the User Dictionary

When the power is turned off, the user dictionary in memory is deleted. If you want to reuse the same user dictionary to check other documents, you must save it before you turn the power off.

### WP mode

STYLE	BLOCK	CTR/RMF	GRAMMAR1	GRAMMAR2	SEARCH	FORM	PAGE	PRINT
			GRAMMAR CHECK					
			GRAMMAR CHECK SET MENU					
			USER DICTIONARY MAINTENANCE					
			USER DICTIONARY LOAD					
			USER DICTIONARY SAVE					

### TW mode

STYLE	CTR/RMF	GRAMMAR
		GRAMMAR CHECK
		USER DICTIONARY MAINTENANCE
		USER DICTIONARY LOAD
		USER DICTIONARY SAVE
		EDIT THESAURUS
		TYPE THESAURUS

1. Press **MENU** to display the function menu.
2. Select GRAMMAR1 in WP mode, or GRAMMAR in TW mode and press **RETURN** or **↓** to display the submenu.
3. Select USER DICTIONARY SAVE and press **RETURN**. The following message appears:

Press RETURN to save.

4. Press **RETURN** to save the user dictionary on the disk.

## Editing the User Dictionary

Once you have created or loaded a user dictionary, you can edit the dictionary in memory directly.

## WP mode

STYLE	BLOCK	CTR/RMF	GRAMMAR1	GRAMMAR2	SEARCH	FORM	PAGE	PRINT
			GRAMMAR CHECK GRAMMAR CHECK SET MENU USER DICTIONARY MAINTENANCE USER DICTIONARY LOAD USER DICTIONARY SAVE					

## TW mode

STYLE	CTR/RMF	GRAMMAR
GRAMMAR CHECK USER DICTIONARY MAINTENANCE USER DICTIONARY LOAD USER DICTIONARY SAVE EDIT THESAURUS TYPE THESAURUS		

1. Press **MENU** to display the function menu.
2. Select GRAMMAR1 in WP mode or GRAMMAR in TW mode and press **RETURN** or **↓** to display the submenu.
3. Select USER DICTIONARY MAINTENANCE and press **RETURN**. A screen similar to the following appears:

<< USER DICTIONARY >>		SHIFT INS	TOTAL WORDS:XXX
Alfred	Benoit		
Cathy	Packard		
WP	XTY123		
To add, type word. Press MENU for other options. Press F11 to finish.			
ADD: <input type="text"/>			

4. To add a new word, type the word and press **RETURN**. The new word is inserted into the list in alphabetical order. The system will tell you if you try to input a word that already exists in the user dictionary.  
On the USER DICTIONARY screen, the keyboard is always set to KB:I.
5. To select an existing word, move the cursor to that word using **↑**, **↓**, **←**, **→**, **CODE** + **PRE S** (**↑**), or **CODE** + **NEXT S** (**↓**). To find a specific word faster, you can also press **CODE** + **GOTO** (**G**). The following message appears:

Type letter to move cursor.

Type the first letter of the desired word.

6. To display a menu of additional functions, press **MENU**. A screen similar to the following appears. Select from the following options and press **RETURN**:

EXIT	DELETE	ALL DELETE	LOAD	SAVE
Alfred		Benoit		
Cathy		Packard		
WP		XTY123		
Select from menu and press RETURN.				

- **DELETE** — Deletes a word from the user dictionary. The following message appears:

Delete the word from user dictionary? Press RETURN(yes) or CANCEL(no).

Press **RETURN** to delete, or **CANCEL** to keep the word in the user dictionary.

Short cut: To delete a word without displaying the menu, press **CODE** + **D**.

- **ALL DELETE** — Deletes all the words from the user dictionary. The following message appears:

Delete all words in user dictionary? Press RETURN(yes) or CANCEL(no).

Press **RETURN** to delete, or **CANCEL** to keep the user dictionary unchanged.

7. From this screen, you can select EXIT, LOAD, or SAVE to perform the following function.

- **EXIT** — Exits the USER DICTIONARY MAINTENANCE screen.

Short cut: To exit without displaying the menu, press **FILE**.

- **LOAD** — Loads a different user dictionary file from a disk. Insert the disk in the drive, select LOAD and press **RETURN**. Remember that loading a user dictionary file overwrites the user dictionary currently in memory.

- **SAVE** — Saves the user dictionary currently in memory onto a disk. Insert a disk in the drive, select SAVE and press **RETURN**. The following message appears:

Press RETURN to save.

You can save only one User Dictionary file onto one disk.

8. To return to normal typing, press **FILE**.

## Loading a User Dictionary

You can save several user dictionaries as long as each one is on a different disk. This feature is very useful when you are dealing with different kinds of documents. For example, if the documents you create most frequently are letters (containing people's names) and sales reports (containing company names) you can store these two kinds of documents on different disks, and save the corresponding user dictionary on each disk.

If you want to reuse an existing user dictionary, first insert the corresponding disk in the disk drive.

### WP mode

STYLE	BLOCK	CTR/RMF	GRAMMAR1	GRAMMAR2	SEARCH	FORM	PAGE	PRINT
			GRAMMAR CHECK GRAMMAR CHECK SET MENU USER DICTIONARY MAINTENANCE USER DICTIONARY LOAD USER DICTIONARY SAVE					

### TW mode

STYLE	CTR/RMF	GRAMMAR
		GRAMMAR CHECK
		USER DICTIONARY MAINTENANCE
		USER DICTIONARY LOAD
		USER DICTIONARY SAVE
		EDIT THESAURUS
		TYPE THESAURUS

1. Press **MENU** to display the function menu.
2. Select GRAMMAR1 in WP mode or GRAMMAR in TW mode and press **RETURN** or **↓** to display the submenu.
3. Select USER DICTIONARY LOAD and press **RETURN**. The user dictionary is now loaded into the memory.

## Checking Punctuation (WP mode only)

The Punctuation Alert function checks your document for common punctuation errors. It checks, for example, redundant punctuation, the number of spaces before and after punctuation marks, whether parentheses are balanced, and whether a new sentence starts with a capital letter. It highlights the suspect sequence, states the rule being violated, and, in most cases, suggests a replacement that you can insert simply by selecting REPLACE.

You should be aware, however, that the Punctuation Alert can only detect certain punctuation errors. Review the "Punctuation Rules," page 93, for a better understanding of which errors the Punctuation Alert can detect.

**To use the Punctuation Alert function, you set this function to ON on the Grammar Check SET MENU and then use the Grammar Check "ALL" option.** You can check for punctuation errors at the same time as you check spelling, or as a separate function. Simply switch the Spell Checker and the Punctuation Alert on or off as you wish.

## Turning On the Punctuation Alert

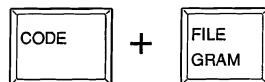
STYLE	BLOCK	CTR/RMF	GRAMMAR1	GRAMMAR2	SEARCH	FORM	PAGE PRINT
			GRAMMAR CHECK GRAMMAR CHECK SET MENU USER DICTIONARY MAINTENANCE USER DICTIONARY LOAD USER DICTIONARY SAVE				

1. Insert the Punctuation Alert Disk into the disk drive.
2. Press **MENU** to display the function menu.
3. Select GRAMMAR1 and press **RETURN** or **↓** to display the submenu.
4. Select GRAMMAR CHECK SET MENU and press **RETURN**. The following menu appears:

<< GrammarCheck SET MENU >>	
CHECK ALL WORDS	
SPELL CHECK	ON
PUNCTUATION ALERT	OFF
Select item and press SPACE to change setting. Press RETURN to finish.	

5. Select PUNCTUATION ALERT and press **SPACEBAR** to switch the function on. If you want to check spelling, make sure the SPELL CHECKER is on also. (At least one of the functions on this screen must be on.) Press **RETURN** to save the new setting.

### Checking the Punctuation



1. Turn on PUNCTUATION ALERT using the above procedure.
2. Press **MENU** to display the function menu.
3. Select GRAMMAR1 and press **RETURN** or **↓** to display the submenu.
4. Select GRAMMAR CHECK and press **RETURN**. The following menu appears:

Use cursor to select. Press RETURN.	
ALL	ONE WORD

Short cut: Instead of steps 2, 3, and 4, press **CODE** + **GRAM** (**FILE**).

5. Select ALL and press **RETURN** to start checking.
  - If you have not yet inserted the Punctuation Alert Disk, the following message appears:



Insert Punctuation alert disk and press RETURN.

Insert the disk and press **RETURN**.

6. When an error is detected, a menu of options appears.

Example: You typed "The quick brown fox,,". The following screen appears:

The quick brown fox,,

**PUNCTUATION** : Unnecessary comma(s)  
**SUSPECT MARK** : ,,  
**SUGGESTION** : ,  
►MENU◀ **IGNORE** REPLACE RETYPE

7. Select an option and press **RETURN**.

- If you select **IGNORE**, the system searches for the next punctuation error.
- If you select **REPLACE**, the suggested mark replaces the suspect one and the system searches for the next punctuation error.
- If you select **RETYPE**, an input area appears and you can retype the correct mark (instead of retyping, you can also press **⌘** first to bring the suspect mark in the input area, then edit the mark). When you press **RETURN**, the typed or edited mark replaces the suspect one and the system searches for the next punctuation error.

8. The process repeats until the end of the document, or until you press **CANCEL** or **CODE** + **GRAM** (**FILE**) to turn the Grammar Check system off.

- If the machine suspects an error but cannot suggest a replacement, a screen similar to the one shown below appears.

The quick brown fox)

**PUNCTUATION** : Missing an open parenthesis, bracket, or quotation mark.  
**SUSPECT MARK** : )  
**NO SUGGESTION**  
►MENU◀ **IGNORE** EDIT

- Select **IGNORE** to proceed to the next suspect area or select **EDIT** to correct the error. The machine returns to the Input/Edit screen. The cursor moves to the position after the error, and the following message appears:

Edit the error. Move cursor to starting point and press GRAM to check.

## Punctuation Rules

The Punctuation Alert considers the following rules when checking punctuation:

1. Two spaces must follow periods, exclamation points, and question marks.  
Exceptions: Periods used in abbreviations such as "U.S.A." and "a.m."
2. Sentences must begin with a capital letter.
3. Ellipses are composed of three periods separated by spaces.
4. A single space must follow a comma.  
Exception: Commas used in numbers, such as "100,000" or "\$2,500."
5. Only one space follows colons and semicolons.  
Exception: colons used in times, such as "12:40 p.m."
6. No space or only a single space should appear before and after hyphens and dashes.
7. No spaces should appear immediately inside parentheses or brackets.
8. No period, comma, exclamation point, or question mark should follow a quotation mark.
9. No colon or semicolon should appear before a quotation mark.
10. No period, comma, colon, or semicolon should follow an open parentheses or bracket.
11. No comma should appear in front of an open parenthesis or bracket.
12. Unmatched parentheses, brackets or quotation marks cause an error.
13. Two or more consecutive question marks or exclamation points (such as "!!" or "??") cause an error.
14. Consecutive commas cause an error.

## Counting Words (WP mode only)

STYLE	BLOCK	CTR/RMF	GRAMMAR1	GRAMMAR2	SEARCH	FORM	PAGE	PRINT
				WORD COUNT				
				EDIT	THESAURUS			
				TYPE	THESAURUS			

The Word Count function scans your text and tells you how many times each word has been used. It also allows you to search for each occurrence of any word used. Words are displayed in descending order of frequency, with words of the same frequency listed alphabetically (capital letters first). The scan proceeds toward the end of the document.

The Word Count function can count the occurrence of up to 2,000 different words, and up to 255 occurrences of a single word. About 55 words (averaging seven characters each) can appear on the screen at one time.

1. Position the cursor at the beginning of the paragraph in the text where you want to start counting.

2. Press **MENU** to display the function menu.
3. Select GRAMMAR2 and press **RETURN** or **↓** to display the submenu.
4. Select WORD COUNT and press **RETURN**. A message indicating that counting is in progress will appear on the screen. When counting is completed, a screen (the WORD COUNT screen) similar to the following one appears:

```

<< WORD COUNT >>

3 of
2 and
2 or
2 with
3 to
2 function
2 the
1 word
To search, select a word and press RETURN. To recount, press CODE + R.

```

To recount the words when the WORD COUNT screen is displayed, press **CODE** + **R**.

- Underlining, bold, superscript, and dead keys are ignored when scanning words. This means that "brother", "**brother**", and "brother" are counted as identical words.
  - However, capital letters are taken into account. This means that "brother", "Brother", and "BROTHER" are counted as different words.
5. If you want to search for each occurrence of a particular word, position the cursor on that word and press **RETURN**. You can scroll the list with **←**, **→**, **↑**, **↓**, **CODE** + **NEXTS** (**↓**) and **CODE** + **PREV** (**↑**).

Pressing **CANCEL** stops the search and returns you immediately to the Input/Edit screen.

6. To search for the next occurrence of the word, select WORD COUNT from the function menu. The block cursor will be on the word sought previously on the WORD COUNT screen. Then, press **RETURN**. If there are no further occurrences, the following message is displayed and you return to the Input/Edit screen:

```
Word(s) not found.
```

Words which have been searched for can be replaced with synonyms using the Thesaurus function, which is described in the next section.

## Using the Thesaurus (Option)

The optional Thesaurus function displays a list of synonyms for a word you specify, and allows you to replace the word with one of the synonyms. The thesaurus used by this machine contains 45,000 words.

There are two ways to use the Thesaurus function: while editing and while typing. In "edit" mode, the Thesaurus gives synonyms for a word that is already in the document. In "type" mode, the Thesaurus waits for you to type a word and then provides synonyms for that word.

## Using the Thesaurus While Editing

### WP mode

STYLE	BLOCK	CTR/RMF	GRAMMAR1	GRAMMAR2	SEARCH	FORM	PAGE	PRINT
				WORD COUNT				
				EDIT THESAURUS				
				TYPE THESAURUS				

### TW mode

STYLE	CTR/RMF	GRAMMAR
GRAMMAR CHECK		
USER DICTIONARY MAINTENANCE		
USER DICTIONARY LOAD		
USER DICTIONARY SAVE		
EDIT THESAURUS		
TYPE THESAURUS		

1. Insert the Thesaurus disk into the disk drive.
2. Position the cursor on the word that you want to replace with a synonym. (In the example below, the word is "still".)
3. Press **MENU** to display the function menu.
4. Select **GRAMMAR2** in WP mode or **GRAMMAR** in TW mode and press **RETURN** or **F1** to display the submenu.
5. Select **EDIT THESAURUS** and press **RETURN**. After a while, a menu similar to the following appears:

still	
Use cursor to select. Press RETURN.	
SPECIFIED WORD: still	
►THESAURUS ◀	NOUN (1) VERB (2) ADJ. (4) ADV. (4)

This menu shows that the system found synonyms for the word "still" in four syntactic categories: nouns, verbs, adjectives, and adverbs. The same categories will not necessarily be displayed for all words.

- The number at the right of each category indicates the number of semantic groups into which that category is subdivided. For instance, VERB(2) means that the verbs that are synonyms of the word "still" are divided into two groups.
- By definition, synonyms are words with (almost) the same meaning. You will find, however, that words in the same semantic group are closer to each other than words from different semantic groups in the same syntactic category.
- If there is no synonym for the specified word, the following message appears:

Synonym not found.
--------------------

6. Select a category and press **RETURN**. You can also press **CANCEL** to exit the function. Assume, in this example, that you selected VERB(2). The following menu appears:

```

still
-----
Use cursor to select. Press RETURN.
SPECIFIED WORD: still
VERB1      : silence  quiet  shut up  hush  shush
  
```

7. Select a word. If the complete list cannot fit on the display, use the cursor keys to scroll through the list. If there is more than one semantic class, use **↑** and **↓** to display the other classes.

```

still
-----
Use cursor to select. Press RETURN.
SPECIFIED WORD: still
VERB2      : settle  compose  calm  soothe  quiet  lull  allay  becalm
  
```

8. Press **RETURN** to replace the word with the synonym you have selected, or press **CANCEL** to return to the first menu, from which you can select another syntactic category. To exit the function without replacing the specified word, press **CANCEL** again.

## Using the Thesaurus While Typing

### WP mode

```

STYLE  BLOCK  CTR/RMF  GRAMMAR1  GRAMMAR2  SEARCH  FORM  PAGE PRINT
                                     WORD COUNT
                                     EDIT THESAURUS
                                     TYPE THESAURUS
  
```

### TW mode

```

STYLE  CTR/RMF  GRAMMAR
                  GRAMMAR CHECK
                  USER DICTIONARY MAINTENANCE
                  USER DICTIONARY LOAD
                  USER DICTIONARY SAVE
                  EDIT THESAURUS
                  TYPE THESAURUS
  
```

1. Insert the Thesaurus disk into the disk drive.
2. Press **MENU** to display the function menu.
3. Select GRAMMAR2 in WP mode or GRAMMAR in TW mode, and press **RETURN** or **↓** to display the submenu.
4. Select TYPE THESAURUS and press **RETURN**. The system asks you to type the word for which a synonym is needed:

3. Select PRINT and press **RETURN**. The PRINT MENU screen appears.

```

<< PRINT MENU >>      PRINT FILE:XXXXXXXX

STARTING PAGE          1
ENDING PAGE            999
NUMBER OF COPIES       1
HEADER PRINT           YES
FOOTER PRINT           YES
PAUSE FOR KB CHANGE    YES
DOUBLE COLUMNS        NO
SPACE BET. COLUMNS    5
  
```

Type number, insert paper, press RETURN to start printing.

The print options you can set from this menu are described in the table below.

Option	Meaning
STARTING PAGE	The page number of the file on which printing is to start. The setting must be greater than zero and less than 1000. The default is 1 (starting from the first page).
ENDING PAGE	The page number of the file on which printing is to end. Must not be lower than the STARTING PAGE number. If the number is higher than the total number of pages, printing stops after the last page. The default is 999.
NUMBER OF COPIES	The number of copies you want to print. Must be greater than zero and less than 100. The default is 1 (the pages are printed once).
HEADER PRINT	Use <b>SPACE BAR</b> to switch between YES and NO. If YES, any existing header will be printed on each page. If NO, no header will be printed, even if you have entered one.
FOOTER PRINT	Use <b>SPACE BAR</b> to switch between YES and NO. If YES, any existing footer will be printed on each page. If NO, no footer will be printed, even if you have entered one.
PAUSE FOR KB CHANGE	Use <b>SPACE BAR</b> to switch between YES and NO. If YES, the printer pauses when you must change the daisy wheel. If NO, all pages will be printed using the same keyboard and daisy wheel that is used for the first character in the document. However, if there is a change in pitch within the document, the printer will pause when it reaches the pitch change.
DOUBLE COLUMNS	This should be left as NO when printing ordinary document files. Specify YES if you are printing double columns. (See "Double Columns Printing," page 102.)
SPACE BET. COLUMNS	This is used together with column printing and should be ignored when printing ordinary document files. (See "Double Columns Printing," page 102.)

The default settings for STARTING PAGE, ENDING PAGE, and NUMBER OF COPIES are displayed each time the PRINT MENU screen appears.

Short cut: Instead of steps 2 and 3, press **CODE** + **PRINT** (**P**).

4. Move the cursor with **↑** and **↓** to any settings you would like to change, and change using **SPACEBAR** for YES/NO setting, or by typing the desired setting for the other options.

You can press **CANCEL** at any time to terminate selection and return to the WP INDEX screen.

If you enter a setting the machine cannot accept, the following message appears, and you can correct the setting.

Incorrect setting.

If the setting for STARTING PAGE is greater than the last page of the document, the following message appears:

Incorrect page number. Press CANCEL to exit.

5. Insert a sheet of paper. (See "Inserting Paper," page 12.) Press **RETURN**. When printing starts, the following message appears.

Printing. Press SPACE to pause.

6. If this is the first time you are printing the file, or you have previously printed a file using a different pitch, you will be prompted to install the proper daisy wheel to match the pitch setting selected. Insert the correct wheel, if necessary, and press **RETURN**.

## Pausing and Resuming Printing



Sometimes you may wish to temporarily interrupt printing, to adjust the paper position, for example.

1. Press **SPACEBAR** to stop the printer. The following message appears.

Printing paused. Press SPACE to continue.

2. Press **SPACEBAR** to restart the printer. The following message reappears:

Printing. Press SPACE to pause.

Printing in progress can be terminated by pressing **CANCEL**.

When printing is completed (or cancelled), the WP INDEX screen appears.

## Changing the Daisy Wheel

When printing a document, you must change the daisy wheel for every pitch change and keyboard change in the document. Each time the word processor finds a pitch change (and you have set the PAUSE FOR KB CHANGE option to YES) or a keyboard change, printing is interrupted and a message similar to the following appears:

Change to KB:II 12 wheel and press RETURN.

This means that an international (KB II) daisy wheel of pitch 12 is required at this point. Change the wheel and press **RETURN** to resume printing.

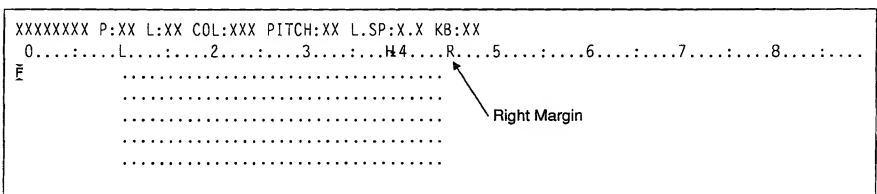
If PAUSE FOR KB CHANGE is set to NO on the PRINT MENU screen, printing stops for pitch changes, but not for keyboard changes.

## Double Columns Printing

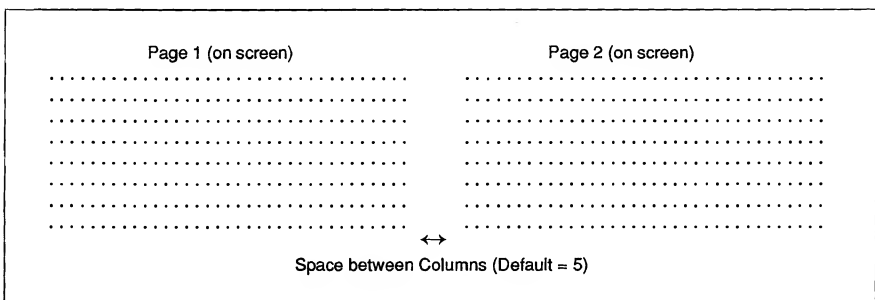
This function allows you to print two columns of text on a page. To print two columns, you must create your document so that each page on the screen represents a column on paper. Odd number pages will be printed as the left column and even pages will be printed as the right column.

When formatting your document for double columns printing, make sure that the space between the margins is small enough so that both columns and the space between columns can fit on the paper. It is also recommended that you use pitch 12 or 15 in order to fit enough text in a line.

### Right Margin Setting for Double Columns Printing



### Double Columns Printout



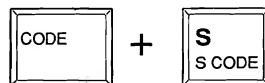


To ensure proper column alignment, the document must not contain any margin or pitch or line spacing changes. It may, however, contain any number of keyboard changes and tab stops.

1. Make sure the text has been formatted for double columns printing.
2. Proceed as you would do to print an entire file in standard format. (See "Printing an Entire Document," page 99.)
3. When the PRINT MENU screen appears, set the DOUBLE COLUMNS option to YES, and change the SPACE BET(ween) COLUMNS option if necessary. (The default is five blank spaces; the available range is from 1 to 50.) At this point, you can also change other settings on the function menu.
4. Press **RETURN** to start printing.

Stop symbols are ignored (replaced with blank spaces) during double columns printing.

## Stopping the Printer While Printing



Stop symbols "S" can be placed in your file to instruct the printer to stop at a particular point. When printing stops, the word processor automatically switches to the Typewriter mode and you can insert text at that position. This feature is primarily used to type form letters with minor changes. For example, to print two letters that are identical letters except for the name and address, proceed as follows:

1. When creating the letter, press **CODE** + **S CODE** (**S**) to insert a stop code at the point where the name and address appears.
2. Save your document and start printing the file as explained in "Printing an Entire Document," page 99.
3. When the word processor finds a stop code, printing is interrupted and the following message appears:

Stop code. Type text and press PRINT to continue.

4. Type your text (name and address in our example). The text will not be stored in the memory. The remainder of the file will, however, be reformatted to accommodate the inserted text.
5. Press **CODE** + **PRINT** (**P**) to resume printing.

Stop codes are ignored (replaced with a space) during page printing. They are only effective during file printing from the WP INDEX screen. You can print the file as many times as required, each time inserting different information.

When printing has temporarily stopped (a stop code has been encountered), printing can be canceled entirely by pressing **CANCEL**, at which time the WP INDEX screen appears.

When a stop code for direct typing is encountered at the end of the text area defined in the P SIZE setting (54 lines at default) and additional typing would exceed this setting, a beep sounds and the machine goes into PAGE END status. The following message appears on the display:

Page end. Press CORRECT to type one more line.

In order to type one more line, press **CORRECT** and begin typing. Or press **P INS** to change to a new page.

# Saving and Retrieving Documents

## Saving a New Document



When you have completed typing and formatting a document, you will want to save it on the disk. Although the word processor allows you to type and print documents without saving them on the disk, saving is a good habit. You might, for example, find a mistake or change your mind just as you put the letter in the envelope. You can always delete unwanted documents later if you need more disk space.

After creating a new file (the file name that appears on the upper-left corner of the screen is \*NEWFILE), you have the option of saving or abandoning (deleting) the file.

1. Insert a data disk if you have not yet done so. Press **FILE**. The following prompt appears:

Save file? Press RETURN to save, CORRECT to abandon.

2. Press **RETURN** if you want to save the file, or **CORRECT** if you do not want to save the file.

WARNING: If you press **CORRECT**, your work will be lost.

Press **CANCEL** instead of **RETURN** or **CORRECT** to abandon the file and return to the Input/Edit screen.

3. If you press **RETURN**, the machine asks you to enter a file name:

Type filename and press RETURN.  
FILENAME:

4. Type the file name (see "Entering a File Name," page 106) and press **RETURN**. The machine returns to the WP INDEX screen and you can confirm that the new file appears in the list.

## Saving an Existing Document



After editing an existing file, you have the options of replacing the old version on the disk with the new version (overwriting), abandoning the new version, or saving the new version under a separate file name.

1. After editing the file, press **FILE** to display the following prompt:

Save file? Press RETURN to save, CORRECT to abandon.

If you press **FILE** without editing the document, the word processor proceeds directly to the WP INDEX screen without prompting you to save the file.

2. Press **RETURN** if you want to save the file, or **CORRECT** if you do not want to save the new version of the file.

WARNING: If you press **CORRECT**, the word processor switches to the WP INDEX screen, and your last editing will be lost. The old version of the file will remain untouched on the disk.

Press **CANCEL** instead of **RETURN** or **CORRECT** to return to the Input/Edit screen without saving the document.

3. If you have pressed **RETURN**, the machine asks you if you want to overwrite the old version of the file:

Overwrite. Press RETURN to overwrite.

4. If you press **RETURN**, the new version of your file replaces (overwrites) the old version on the disk, and the WP INDEX screen appears. If you do not want to overwrite the file, but wish to save the new version separately, press **CANCEL**. The following message appears:

Type filename and press RETURN.  
FILENAME: █

5. Enter the new file name and press **RETURN**. (See "Entering a File Name" below.) The machine returns to the WP INDEX screen. You will now have the original file and the new file stored on your disk.

## Entering a File Name

When you are requested to enter a file name, the WP INDEX screen shows only a list of the text files already saved on the disk (all file names starting with an asterisk are dropped — more about such files later). The list of text files is displayed so that you can easily avoid entering a file name that is already used for another file. When typing a file name, please keep the following rules in mind:

1. A file name is made of up to eight characters.
2. The word processor accepts only the following characters in file names: upper and lower case letters of the alphabet (A-Z and a-z), digits (0 to 9), and the hyphen (-).
3. The word processor distinguishes between upper and lower case letters. You can, for example, have files named "AAA" and "aaa" on the same disk.
4. To correct an error, use **BACKSPACE**, **CORRECT**, **WORD OUT**, or **CODE** + **LINE OUT** to erase the preceding letter or use **←** and **→** to move the text cursor back over the name and retype.

5. If you have more files than can be displayed on the screen, use **↑**, **↓**, **CODE** + **PRE S** (**↑**), and **CODE** + **NEXT S** (**↓**) to scroll the file names on the WP INDEX when typing a new file name.
6. If you enter a name that is already used by another document, the following message appears:

Overwrite. Press RETURN to overwrite.

Press **CANCEL** to enter another file name. Press **RETURN** to overwrite the file existing on the disk.

## Retrieving a Document

To retrieve an existing file, you must first switch to the WP INDEX screen. You can do that by selecting WORD PROCESSING in the MAIN MENU and pressing **RETURN** just after turning the power on. If working on another document, press **FILE** to return to the WP INDEX screen (in this case the machine will ask you if you want to save that document).

Once the WP INDEX screen is displayed, select the name of the file that you want to retrieve by moving the cursor with **←**, **→**, **↑**, and **↓** to its name on the screen and pressing **RETURN**. The file is loaded from the disk into the internal memory and the beginning of the document is displayed on the Input/Edit screen.

## Automatic Document Protection

This word processor is equipped with an automatic saving function that prevents the loss of a document if the power is accidentally turned off before you save the file.

When you have created a file with up to 2,000 key strokes of data, the word processor will automatically create an AUTO SAVE FILE. This file will be updated every 2,000 strokes. In the event of an accidental power outage, all but the last part of your file (text after the last update of the AUTO SAVE FILE) is safe.

When you turn the power on with a disk inserted in the drive, the system automatically searches for the AUTO SAVE FILE. If such a file exists, the system understands that an accident occurred during the last session with that disk, and the following message telling you how to recover the lost file will appear:

POWER FAILURE.... recover AUTO SAVE FILE? Press RETURN(yes) or CANCEL(no).

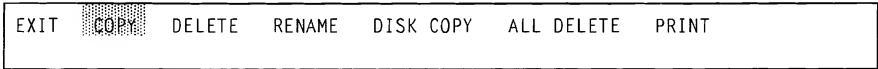
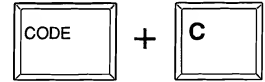
Press **RETURN** to recover the contents of the file, or **CANCEL** to delete the AUTO SAVE FILE from the disk.

When you save a file, the AUTO SAVE FILE is deleted so that the next time you turn the power on, the AUTO SAVE FILE will not be found, and the above message will not appear.

# Managing Files

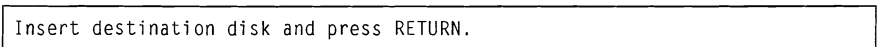
The WP INDEX screen displays a list of all the Word Processing files on the disk. You can copy, delete, rename, or print these files from this screen.

## Copying a File



The copy function allows you to make a copy of a file so that, for example, you can edit a file and keep both the old and new versions on the disk.

1. Move the cursor to the file that you want to copy.
2. Press **MENU** to display the function menu.
3. Select COPY and press **RETURN**. The following message appears:

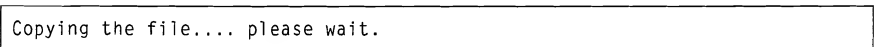


Short cut: Instead of steps 2 and 3, press **CODE** + **C**.

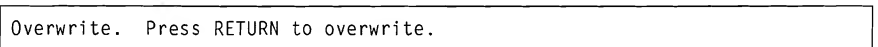
4. You can create the copy on the same disk or on a different disk. To copy onto the same disk, just press **RETURN**. If you want to copy the file to another disk, remove the source (original) disk and insert the destination disk and press **RETURN**. The following message appears:



5. Enter the new file name and press **RETURN**. The following message is displayed during the copy operation and disappears after completion. The system then returns to the WP INDEX screen, with the cursor on \*NEWFILE.

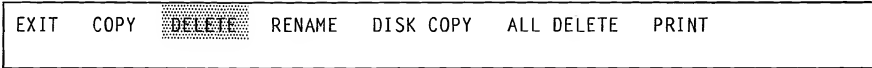
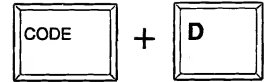


If the file name you specified already exists on the disk, the following message appears:



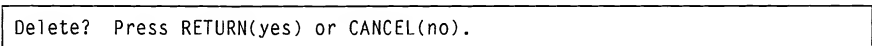
Press **RETURN** to overwrite or **CANCEL** to change the file name and proceed from step 5.

## Deleting a File



The DELETE function allows you to delete files you no longer need.

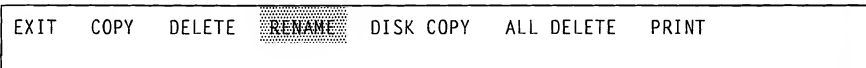
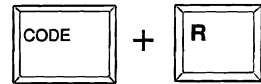
1. Move the cursor to the file that you want to delete.
2. Press **MENU** to display the function menu.
3. Select DELETE and press **RETURN**. The following message appears:



Short cut: Instead of steps 2 and 3, press **CODE** + **D**.

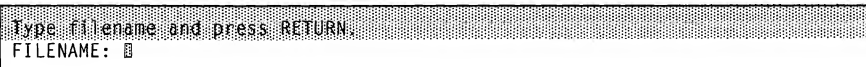
4. Press **RETURN** to delete the file. The file is deleted and the WP INDEX screen is updated. If you press **CANCEL**, the message disappears without deleting the file. The cursor remains on the file specified for deletion.

## Renaming a File



To change the name of a file, follow these steps.

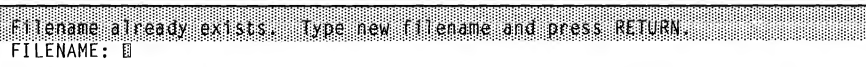
1. Move the cursor to the file that you want to rename.
2. Press **MENU** to display the function menu.
3. Select RENAME and press **RETURN**. The following message appears:



Short cut: Instead of steps 2 and 3, press **CODE** + **R**.

4. Input the new file name and press **RETURN**. The above message disappears and the WP INDEX screen is updated.

If the specified new file name already exists when you press **RETURN** in step 4, the following message appears:



Proceed as in step 4, using a different file name.

Pressing **CANCEL** while a message is displayed cancels the operation and returns the system to the WP INDEX screen.

## Copying an Entire Disk

EXIT COPY DELETE RENAME **DISK COPY** ALL DELETE PRINT

The DISK COPY function allows you to make back-up copies of important disks. It is a good idea to make back-up copies in case the original disks are damaged or accidentally erased.

1. Press **MENU** to display the function menu.
2. Select DISK COPY and press **RETURN**. The following message appears:

Insert source disk and press RETURN.

3. Insert the source (original) disk and press **RETURN**. The machine copies the disk data into memory. The following message appears:

Insert destination disk and press RETURN.

### WARNING

**Copying an entire disk to another destroys any data that may be on the destination disk. Check the destination disk before starting. Be sure your destination disk has been initialized.**

4. Insert the destination disk and press **RETURN**, then wait for the following prompt to appear:

Insert source disk and press RETURN.

Repeat steps 3 and 4 until all data has been copied. Since the memory can only hold a certain amount of data at one time, you will need to alternately insert the source (original) and destination disks several times, regardless of the amount of data to be copied.

5. Press **CANCEL** (except during disk access) to cancel the operation.



## Deleting All Files

EXIT COPY DELETE RENAME DISK COPY ALL DELETE PRINT

The ALL DELETE function allows you to delete all Word Processing files on the disk.

1. Press **MENU** to display the function menu.
2. Select ALL DELETE and press **RETURN**. The following message appears:

Delete all files on this index? Press RETURN(yes) or CANCEL(no).

3. If you press **RETURN**, all the Word Processing files on the disk are deleted, the message disappears, and the cursor moves to \*NEWFILE. Pressing **CANCEL** interrupts deleting and returns the system to the WP INDEX screen. Any files created in a different mode remain on the disk.

# CHAPTER 5

## Spreadsheet

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Introduction.....113

Starting the Spreadsheet Mode .....115

Setting Up a Spreadsheet.....120

Modifying a Spreadsheet.....133

Managing Spreadsheet Files.....147

Using Templates.....154

# Introduction

## What is a Spreadsheet?

In the past, financial records were kept by hand, often on worksheets laid out in grid form. For example, the grid might have the months of the year across the top, and monthly expenses down the left column, providing an area to record how much is spent each month on each expense. Parts of the worksheet are set aside for calculations, such as total expenses for the month or year. This type of worksheet is often called a spreadsheet.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
A) Household Items:									
Mortgage/Rent	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Heat/Water	110	110	100	80	70	70	60	60	60
Gas & Electric	35	35	35	30	25	25	25	25	30
Phone	35	35	35	35	35	35	35	35	35

Even with an electronic calculator to perform the calculations, this type of record-keeping can be time-consuming, especially when revisions or corrections must be made. For this reason, the electronic spreadsheet was created.

With an electronic spreadsheet, you can create a grid on the screen. You can type the information and make changes or corrections at any time. You can also instruct the electronic spreadsheet to perform calculations on the numeric data you have provided, and recalculate when you make changes. Besides helping you keep neat and accurate records, this feature allows you to "try out" possible changes in your financial plans before you make important decisions.

## Parts of a Spreadsheet

As shown in the following illustration, the grid of a typical electronic spreadsheet consists of columns, rows, and cells.

The diagram shows a spreadsheet grid with the following labels and arrows:

- Column:** An arrow points to the 'Feb.' header in the second column.
- Label:** An arrow points to the 'Apr.' header in the fourth column.
- Row:** An arrow points to the 'Heat/Water' row in the third row.
- Cell:** An arrow points to the cell containing '110' at the intersection of the 'Feb.' column and the 'Heat/Water' row.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
A) Household Items:									
Mortgage/Rent	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Heat/Water	110	110	100	80	70	70	60	60	60
Gas & Electric	35	35	35	30	25	25	25	25	30
Phone	35	35	35	35	35	35	35	35	35

A column is vertical grouping of information. A row is a horizontal grouping of information. A cell is the intersection of a row and a column. Each piece of information, for example, the cost of a particular expense for a particular month, is entered into a cell.

Also, each row and column usually has a label. The label reminds you of which information is in each row or column.

## The Spreadsheet Mode

The Spreadsheet mode provided by this machine is similar to the spreadsheet software commonly used on personal computers. The Spreadsheet program is supplied on the disk that comes with your unit.

### Input/Edit Mode and Command Mode

You create and format your spreadsheet using two different modes. The Input/Edit mode allows you to insert and change data within individual cells. The Command mode allows you to format and modify an entire range of cells at one time.

### Formulas and Functions

To specify a calculation, you enter a mathematical formula rather than a number in the cell. The cell does not display the formula, but rather the result of the calculation you requested. The Spreadsheet also provides "built-in" formulas called functions, which allow you to perform certain common calculations without having to specify complicated formulas.

### Spreadsheet Templates

Spreadsheet templates for the most common spreadsheet uses are provided to save you the time and trouble of creating an entire spreadsheet from scratch. The templates are supplied on the disk. To use a template, simply display the template from the disk, modify it to suit your purposes, and enter your data. Then, use the Recalculate function to perform the calculations on your data.

### Printing, Managing and Converting Files

Like Word Processing files, Spreadsheet files can be saved on a disk so that you can edit, print or refer to them later. In addition, Spreadsheet files can be converted into Word Processing files, so that you can use them in Word Processing documents.

### Function Menus and On-Screen Help

You can perform many Spreadsheet functions by selecting the function from a menu. Press **MENU** from the SPREADSHEET INDEX screen or Input/Edit screen to display the function menu. For more information on using menus, see "Using Menus," page 20.

Once you are familiar with the functions, you can select them more quickly using "short cuts" consisting of **CODE** + a letter key. If you need help remembering which functions are available in Spreadsheet mode and how to perform them using short cuts, press **CODE** + **HELP** (**H**). In Spreadsheet mode, you can perform the functions directly from the Help screens.

1. To display a Help screen, press **CODE** + **HELP**. The list of functions available at that moment, and the corresponding keys, appears on the screen.
2. Press **CODE** + the indicated letter key to perform the function you want. The Help menu disappears and the function is activated. Press **CANCEL** or press **CODE** + **HELP** again to cancel the Help menu without activating a function.

# Starting the Spreadsheet Mode

To enter the Spreadsheet mode, you must have the Spreadsheet disk inserted into the drive. When you want to save or retrieve a Spreadsheet file on a different data disk, remove the Spreadsheet program disk and insert that data disk. If the machine requires the Spreadsheet program disk when a data disk is inserted in the drive, a message appears asking you to insert the program disk. Replace the data disk with the program disk.

## WARNING

**The Spreadsheet program uses the entire memory of your machine. If the User Dictionary stored in the memory, store it to a data disk before starting the Spreadsheet program. When the Spreadsheet program is loaded, all internal memory is cleared, including any data that may be stored in the temporary file for copying purposes.**

## Starting the Spreadsheet Mode

To enter the Spreadsheet mode:

1. Insert the Spreadsheet disk into the disk drive.
2. Press both **CODE** + **Q**, and hold down both keys while you turn on the machine. Release the keys when the DISK APPLICATION screen shown below appears. Instead of this key operation, select DISK APPLICATION from the MAIN MENU and press **RETURN**. The DISK APPLICATION screen appears.

```
<< DISK APPLICATION >>                                REMAIN:XXX.XX
SPREAD.OP5
~
Select a file and press RETURN.
```

3. Select SPREAD.OP5 and press **RETURN**.  
The SPREADSHEET INDEX screen appears.

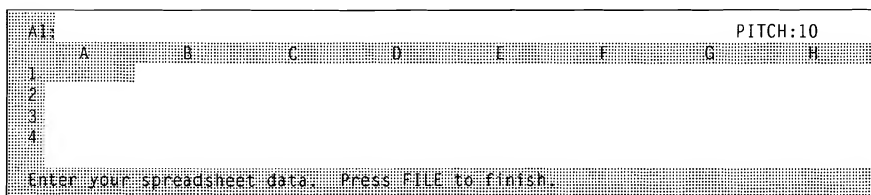
```
<< SPREADSHEET INDEX >>                                REMAIN:XXX.XX
*NEWFILE          SALES.SD2 (XX.X)          BUDG.SD2 (XX.X)
```

This screen lists the files on the disk created in Spreadsheet mode. It includes the eight pre-formatted templates. From this screen you can retrieve an existing file, create a new spreadsheet, or exit from Spreadsheet mode. You can also perform various file functions, including copying, deleting, renaming, or printing a file, converting a spreadsheet into a word processing file, or deleting all the Spreadsheet files on the disk. To perform these functions, press **MENU** to display the function menu, or use the short cut procedures described later in this chapter and listed when you press **CODE** + **HELP** (**H**).

(To use a template, see "Using Templates," page 154.)

4. To create a new spreadsheet, select \*NEWFILE and press **RETURN**. The Spreadsheet Input/Edit screen appears.

## Spreadsheet Input/Edit Screen



The Spreadsheet Input/Edit screen is your electronic spreadsheet. This screen is used to input and edit the data of your spreadsheet. It is divided into cells, designated by their positions on the grid, so that the cell at the top left of the sheet is A1, the cell diagonally to the right and below it B2, and so on.

### Moving Around a Spreadsheet

When you display the Input/Edit screen, the cursor is in cell A1, ready for input. The cursor can be moved with **←**, **→**, **↑**, and **↓** to select the cell where you want to enter data.

Only a portion of the spreadsheet is shown on the screen. The Spreadsheet can extend far beyond what the screen is able to display at one time — you can input data into as much as 20 columns (A through T), and 65 rows (1 through 65).

It is also possible to move the cursor quickly through the Spreadsheet. Pressing **CODE** + a cursor key moves the cursor to a border of the screen. Pressing **CODE** + **GOTO** (**G**) and then a cursor key moves the cursor to an edge of the spreadsheet. In both cases, the cursor moves vertically or horizontally in the direction of the cursor key arrow.

## WARNING

It is possible that you may run out of memory before filling the entire spreadsheet with data, depending on the types of data you enter. The system warns you of this with the message "Memory full." At this point, you can no longer enter data, but only delete it. We recommend that you save your spreadsheet on the disk and continue with a new spreadsheet. As you are working on a spreadsheet, it can use about 15K of memory.

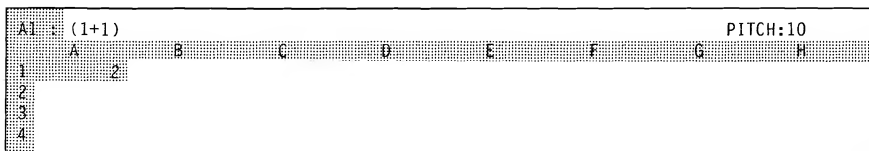
## The Input Area

With a paper spreadsheet, you write the data directly in the cells of the sheet. With this electronic spreadsheet, you type or edit the data of each cell on the top line of the screen, which is called the "Input Area."

You enter two types of data on a spreadsheet: direct input and formula input. Direct input means that what you type appears in the highlighted cell. Formula input means that you type a formula in the Input Area. The result of the formula, rather than the formula itself, appears in the cell.

When you move the cursor across the grid to select a particular cell, the contents of that cell is displayed in the Input Area on the top line of the screen, exactly the way you typed them. What you see in the Input Area may often differ from what is displayed in the cell:

- If you type a formula, the formula — not the result — appears in the Input Area. This feature allows for easy editing when a formula is wrong.
- Direct input data may also look slightly different in the Input Area and in the cell. This is because you can control certain aspects of how data appears in the cells. For example, you can specify that the data in a cell appear in bold. In that case, the data appears in bold in the cell, and in normal face in the Input Area.
















## Entering and Editing Data






















To enter data in an empty cell, select that cell and type the data. A small cursor — the input cursor — appears in the Input Area. Press **RETURN** when you have finished. The data appears in the cell.

Proceed exactly in the same way to replace old data with new data. The old data disappears from the Input Area as soon as you type the first character. The new data appears in the cell when you press **RETURN** after retyping.

- If you mistakenly press a character key while moving around the spreadsheet, press **CANCEL** to restore the original data.

To edit old data without deleting it first, press **TAB**. The cursor appears in the Input Area and you can now edit the data. Press **RETURN** when the data is edited.

- After typing or editing in the Input Area, you can press , , or  instead of . These keys enter the data, and move the cursor one position in the direction of the arrow mark.
- In the Input/Edit mode, you can use  and  to move the cursor across the data in the Input Area. However,  will enter the data, as explained above, if you move past the last character in the cell. You can also use  +  () to move to the first character, or  +  () to move to the last one.

Key	Function
Character keys	Enters data.
 or 	Deletes the character to the left of the cursor.
	Deletes the word to the left of the cursor.
 +  (  )	Deletes all characters from the Input Area.
 +  (  )	Switches between the Insert and Overwrite modes.
	Moves one position to the left.
	Moves one position to the right. If the cursor is to the right of the last character, this key enters the data and selects the next cell to the right.
 +  (  )	Moves the cursor to the first character.
 +  (  )	Moves the cursor to the last character.
	Enters the data and returns to Command mode.
 and 	Enters the data and selects the next cell above or below.
	Restores the old data.



## Exiting the Spreadsheet Mode



To exit the Spreadsheet mode:

1. Press **FILE**. The follow message appears asking you to save or abandon the file:

Insert data disk. Press RETURN to save, press CORRECT to abandon.

2. To save the file you were working on, press **RETURN**. The machine asks you to enter a file name. Enter a file name and press **RETURN**. The Spreadsheet INDEX screen appears and displays the file name you entered.

To abandon the file, press **CORRECT**. The Spreadsheet INDEX screen appears.

3. Press **TW/WR** or press **MENU** and select EXIT from the function menu.

# Setting Up a Spreadsheet

## Entering Alphanumeric Data

You can enter alphanumeric data (letters, digits, and other characters) in any combination. Alphanumeric data is most often used for labels that identify the entries in the spreadsheet, usually as a column heading, such as "JAN" or "12th Region". Even if you use numeric characters in a label, the data is never calculated.

You can also create an entire "spreadsheet" of textual information. For example, you can enter names, addresses and phone numbers in the grid format of a spreadsheet, even though you do not perform mathematical calculations on this information. You can sort this information in alphabetical order. (See "Sorting and Selecting Data," page 142.)

### Format Marks

If the data you enter in a cell begins with an alphabetic letter, the machine knows that it is alphanumeric data and is not to be calculated. The data is placed flush left in the cell unless you include a flush right or centering format mark as the first character.

If the data you enter begins with any of the following:

+ - ( @ 1 2 3 4 5 6 7 8 9 0 .

and the cells are referenced in formulas, you must include a format mark as the first character to tell the machine that the data is not to be used in calculations. (If there are no formulas that reference the cells where the data is entered, or ranges that include them, you need not be concerned about format marks.)

For example, to use a date, personal identification number, or inventory number as a label, be sure to include a format mark. You can use any of the three format marks, depending upon where you want the data placed in the cell.

Format Mark	Position of the Data
'	Flush left
"	Flush right (CODE + R)
^	Centering (CODE + F)

Format marks are displayed in the Input Area only; they never appear in the cell. The above characters are considered as format marks only when they are entered in the first position of the Input Area. If they are entered in the middle of the data, they are considered normal characters and appear in the cell.

Instead of typing the format marks for right justification (") or centering (^), you can press **CODE** + **R** or **CODE** + **F**. If you press these keys while in Command mode, the machine switches to the Input/Edit mode and the corresponding mark appears in the Input Area.

## Maximum Length of Alphanumeric Data

The maximum length of the alphanumeric data in one cell is 55 characters (the total length of the Input Area). If the data cannot fit in the cell, it will use the next cells of the grid unless these cells are already occupied. This feature is used for long titles, when you do not want to disturb the layout of the spreadsheet by increasing the width of a column. It should be noted that entering long alphanumeric data in many cells may cause the memory to become full before all cells are occupied.

## Entering Numeric Data

Numeric data is the numbers or formulas to be calculated. When data is not alphanumeric, and does not begin with a format mark, the machine interprets it as numeric data. Once the data is recognized as numeric, the machine checks whether or not the data is valid.

- If the data is valid, the number or the result of the formula appears in the cell. If the number can fit in the cell, it is automatically right-justified. If the number cannot fit in the cell, a string of asterisks (※) fills the cell. The correct number is, however, kept in the memory and is displayed if you adjust the width of the column.
- If the data is not valid, ERROR appears in the cell, and a message, such as one of the following, tells you the reason the data is invalid.

Example 1: If a denominator is zero.

Division by zero.

Example 2: If a result is positive and contains more than 13 digits.

Numeric overflow.

Example 3: If a result is negative and contains more than 13 digits.

Numeric underflow.

Example 4: If a number contains characters other than numerics and decimal point (e.g. 1,000 100\$, 1A2).

Invalid entry.

# Direct Numbers

A direct number can consists of digits, and possibly a decimal point. The maximum number of digits is 13 (zeroes preceding the other digits are not counted). The following examples show valid and invalid direct numbers:

Valid Numbers	Invalid Numbers
1234	1,000 (comma is invalid)
0.94956	125\$ (\$ is invalid)
00001	12a12 (a is invalid)
000000000000001 (zeroes are discarded)	999999999999999 (more than 13 digits)

## Defining the Format of Numeric Data

MENU	COLUMN	FORMAT	RECALC	SORT	CLEAR	CONVERT
------	--------	--------	--------	------	-------	---------

The Spreadsheet displays all fractional numbers in decimal notation. You can enter numbers in the Input Area as fractions, but they are still displayed in the cell as decimals. The system correctly stores their values.

The machine is set to display no decimal digits. However, you can modify this setting to display fractional numbers with up to five decimal places. You can also display dollar amounts with a dollar sign and two decimal places, and percentage data with the percent sign and, again, up to five digits.

To change the format of numeric data, proceed as follows:

1. Position the cursor on a corner of the range to be formatted and press **MENU** to display the function menu.
2. Select **FORMAT** and press **RETURN**. Specify the range and press **RETURN** again. A menu of options appears:

MENU	FIXED	CURRENCY	PERCENT	NO DISPLAY
------	-------	----------	---------	------------

3. Select a format option and press **RETURN**. The available options are described below.

## Changing the Number of Decimal Places

1. Select **FIXED** from the **FORMAT** menu to set the number of decimal places that you want to display and press **RETURN**.

MENU:	0	1	2	3	4	5	Select number of decimal places.
-------	---	---	---	---	---	---	----------------------------------

2. Select the number of decimal places and press **RETURN**. The following menu appears:

MENU:	NO COMMAS	COMMAS
-------	-----------	--------

3. Select **COMMAS** if you want commas to separate the thousands or **NO COMMAS** if you do not. Press **RETURN**.

## Displaying Dollar Amounts

MENU:	FIXED	CURRENCY	PERCENT	NO DISPLAY
-------	-------	----------	---------	------------

1. Select **CURRENCY** from the **FORMAT** menu to display numbers with two decimal places and a dollar sign, and then press **RETURN**. The following menu appears:

MENU:	ZERO DISPLAY	NO ZERO DISPLAY
-------	--------------	-----------------

2. Select **ZERO DISPLAY** if you want zeroes to be displayed, or **NO ZERO DISPLAY** if you do not. Press **RETURN**. The following menu appears:

MENU:	NO COMMAS	COMMAS
-------	-----------	--------

3. Select **COMMAS** if you want commas to separate the thousands or **NO COMMAS** if you do not. Press **RETURN**.

## Displaying Percentages

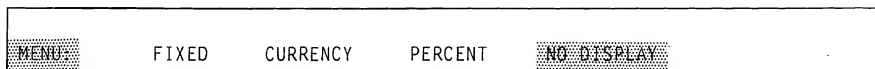
MENU:	FIXED	CURRENCY	PERCENT	NO DISPLAY
-------	-------	----------	---------	------------

1. Select **PERCENT** from the **FORMAT** menu.

MENU:	0	1	2	3	4	5	Select number of decimal places.
-------	---	---	---	---	---	---	----------------------------------

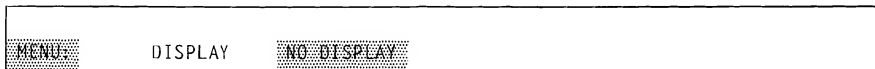
2. Select the number of decimal places and press **RETURN**.

## Hiding Data



"Hidden data" is stored in memory but is not displayed on the grid. This option is useful, for example, if you have to split a complex calculation into more simple steps, and you do not need to display or print intermediate results.

1. Select NO DISPLAY from the FORMAT menu and press **RETURN**. The following menu appears:



2. Select NO DISPLAY to hide data (or select DISPLAY to display data that have been hidden) and press **RETURN**.

## Using Formulas

A formula consists of operators, operands, and, if necessary, parentheses to change the order of calculation. Formulas direct the system to calculate the result of an operation on numbers already input into the spreadsheet, often using cell addresses rather than direct numbers. When cell addresses are used, formulas allow you to create a mathematical relationship between cells that remains unchanged regardless of the content of those cells.

You enter formulas in the same way as you enter direct numbers. After you enter one or more formulas, you must tell the machine to recalculate in order for the results of the formula to appear in the cell. To recalculate, press **MENU** to display the Spreadsheet menu, select RECALC, and press **RETURN**.

Each time you change the data, you must recalculate to display the new results in the cell.

### Operators

The operators you can use in a formula are the following, in order of precedence:

Operator	Function
+ -	Positive and negative sign
#	Exponentiation
× /	Multiplication, division
+ -	Addition, subtraction

- The + and - operators are considered as the sign of the following operand when they come first in a formula, or immediately after a left parenthesis or another operator.

- The # operator performs only integer exponentiation. If the exponent (the next operand after #) has a decimal value, it will be rounded to the closest integer before exponentiation is performed. Therefore, this operator cannot be used to calculate roots (although roots can always be written as a decimal exponent in math). Zero with any positive exponent gives zero. Zero with a negative exponent gives the following message:

Invalid entry.

- Division by zero is invalid.
- A sequence of three or more operators makes a formula invalid ( $2+*-1$  is invalid).
- A sequence of two operators is valid only if the second operator is a + or - sign ( $5*-2$  is valid and gives -10 while  $1*-2$  is invalid).

## Operands

An operand in a formula can be a number, the address of a cell containing numeric data, a function, or a formula enclosed in parentheses. The following examples are valid operands:

123 (direct number)
A1 or a1 (cell address; A1 must contain numeric data)
@SUM(A1..B6) (valid function)
(A1+5*@SUM(B1..b12)) (valid formula included in a pair of parentheses)

- A cell address can be written using either small or capital letters.
- **When a cell address comes first in a formula, it must be preceded with a + or - sign, or by a left parenthesis. Otherwise, the formula is considered alphanumeric data and will not be calculated. Therefore, instead of A1+A2, enter +A1+A2, (A1+A2), or (A1)+A2.**
- If a cell referred to contains alphanumeric data, the formula is invalid, and ERROR appears. An empty cell, however, is valid and assumed to contain zero.

## Examples of Formulas

In order to familiarize yourself with formulas, try the following example.

1. Enter 1+2 in cell A1. (Position the cursor on A1, type 1+2, and press **RETURN**.)

A1	1+2							PITCH:10
1	A	B	C	D	E	F	G	H
2								

The result of the calculation is displayed in A1. The formula as you typed it, however, appears in the Input Area whenever the cursor is placed on cell A1.

The remaining steps show you how to use formulas with cell addresses instead of direct numbers.

2. Enter 10 in cell A2, then enter 2 in cell B2.

B2 : 2		PITCH:10						
1	A	3	B	C	D	E	F	G
2		10		2				

3. Enter +A2+B2 in cell C2 (the + sign is used here because a formula cannot begin with a letter).

C2 : +A2+B2		PITCH:10						
1	A	3	B	C	D	E	F	G
2		10		2				12

4. Enter +A2-B2 in cell D2.

D2 : +A2-B2		PITCH:10						
1	A	3	B	C	D	E	F	G
2		10		2		12		8

5. Enter +A2\*B2 in cell E2.

E2 : +A2*B2		PITCH:10						
1	A	3	B	C	D	E	F	G
2		10		2		12		8
								20

6. Enter +A2/B2 in cell F2.

F2 : +A2/B2		PITCH:10						
1	A	3	B	C	D	E	F	G
2		10		2		12		8
								20
								5

7. Enter +A2#B2 in cell G2.

G2 : +A2#B2		PITCH:10						
1	A	3	B	C	D	E	F	G
2		10		2		12		8
								20
								5
								100

8. Now try changing the value in A2 to 20.



A2 : 20	A	B	C	D	E	F	G	H
							PITCH:10	
1	3							
2	20	2	12	8	20	5	100	

Nothing changes because you have not yet asked the machine to carry out recalculation.

- To recalculate, press **MENU** to display the function menu, select **RECALC**, and press **RETURN**. All the results which depend on the value of A2 are now updated.

A2 : 20	A	B	C	D	E	F	G	H
							PITCH:10	
1	3							
2	20	2	22	18	40	10	400	

## Order of Calculation in a Formula

Calculation of a formula is performed in the order of precedence of the operators: the + or - sign is first attributed to the operand directly to the sign's right, next exponentiations are carried out, then multiplication and division, and finally, addition and subtraction. The following examples show the order of precedence.

Example:  $2 \# 3 \times 4 - 2$   
 $= 8 \times 4 - 2$   
 $= 32 - 2$   
 $= 30$

When two or more operators have the same order of precedence (multiplication and division or addition and subtraction), calculation is carried out from left to right.

Examples:  $1 + 3 + 4 - 2$        $2 \# 3 \# 2$   
 $= 4 + 4 - 2$        $= 8 \# 2$   
 $= 8 - 2$        $= 64$   
 $= 6$

You can use parentheses to modify the order of calculation. The operation in parentheses is performed first. Be sure to include both the opening and closing parentheses.

Examples:  $1 + 3 \times 4$        $(1 + 3) \times 4$   
 $= 1 + 12$        $= 4 \times 4$   
 $= 13$        $= 16$

Parentheses can also be nested. Calculation proceeds from the innermost pair of parentheses. Up to six pairs of parentheses can be nested.

Example:  $((3 \times 4 + 1) \times 4 + 3) \times 4 - 12$   
 $= (13 \times 4 + 3) \times 4 - 12$   
 $= 55 \times 4 - 12$   
 $= 220 - 12$   
 $= 208$

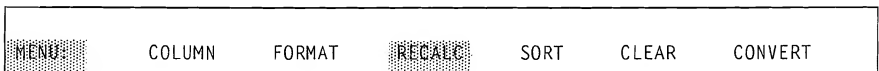
## Maximum Length of a Formula

The maximum length of a formula is 55 characters (the total length of the Input Area). If a formula is longer, try to simplify it by using functions. (See "Using Functions," below.) Note that many long formulas may cause the memory to become full before all the cells are filled.

## Recalculation

When you input or edit numeric data in a cell, the data or result of the calculation appears in the cell as soon as you press **RETURN**. However, if formulas in other cells use this data, the cells are not automatically updated. In order for cells to incorporate the new data, you must recalculate.

1. Press **MENU** to display the function menu.



2. Select **RECALC**, and press **RETURN**.

**IMPORTANT:** If you have used formulas that reference cells which themselves reference other cells, you may not get correct results after the first recalculation. Recalculate again and continue recalculating until further recalculation does not change the results.

## Using Functions

The Spreadsheet mode provides "built-in" formulas called functions. Functions allow you to perform common calculations and other tasks without having to enter long and complicated formulas yourself. Functions consist of the @ character, followed by the function name in capital or small letters, and the "arguments" enclosed in parentheses.

Arguments are the information from your spreadsheet that you want the function to use in its calculations. Arguments are numbers or cell addresses (separated by commas) or a range defined by the addresses of two opposite corners (separated with two periods).

Examples:

@SUM(1,A1,4,B6) returns the sum  $1+A1+4+B6$

@SUM(A1..B4) returns the sum  $A1+B1+A2+B2+A3+B3+A4+B4$

- Some functions like @INT accept only one argument. In that case, specifying more than one argument or specifying a range makes the formula invalid.
- A range cannot be used together with numbers or addresses.

Example:

@SUM(1,A1..B4) and @SUM(A23,A1..B6) are invalid.

- Although a function is a valid operand of a formula, a formula is not a valid argument of a function.

Examples:

1+A1+@SUM(B2..C5) is a valid formula.

@SUM(1+2), @SUM(+A1), and @SUM(1+A1) are all invalid.

## What is a Range of Cells?

A range is a continuous rectangular area of cells. You can specify the entire range of cells by providing the addresses of two opposite corners, separated by two periods. For example, you can specify a range using the notation A1..C3. You could also specify the same range with A3..C1, C1..A3, or C3..A1.

A1	A	B	C	D	E	F	G	H
1	Range A1..C3, A3..C1, C1..A3, or C3..A1							PITCH:10
2								
3								

The Spreadsheet automatically defines the addresses of the top left and bottom right corners.

For example, Suppose you want to calculate the sum of the range A1..E2 and display the result in G1.

G1	A	B	C	D	E	F	G	H
1	1	2	3	4	5			PITCH:10
2	6	7	8	9	10			

1. Move the cursor to G1 and type @SUM(. As soon as you type the left parenthesis of the function, the following message appears:

Enter cell specification.

2. Instead of typing A1, move the cursor to A1 and press **CODE** + **L**. @SUM(A1.. is now displayed in the Input Area.

A1	A	B	C	D	E	F	G	H
1	1	2	3	4	5			PITCH:10
2	6	7	8	9	10			

3. Move the cursor to the opposite corner of the range (E2).

E2	A	B	C	D	E	F	G	H
1	1	2	3	4	5			PITCH:10
2	6	7	8	9	10			

4. Press **RETURN**. The cursor is back on G1.

G1	@SUM(A1..E2)PITCH:10									
	A	B	C	D	E	F	G	H		
1		1	2	3	4	5				
2		6	7	8	9	10				

5. Press **RETURN** again. The result, 55, appears cell G1.

G1	@SUM(A1..E2)PITCH:10									
	A	B	C	D	E	F	G	H		
1		1	2	3	4	5				
2		6	7	8	9	10	55			

# Functions Available

Some functions can process only one argument, while others can accept multiple arguments. The following tables describe both kinds of functions.

## Functions Using a Single Argument

<p><b>@ABS</b> — Gives the absolute value of the argument. If the argument is positive or zero, the same value is returned; if the argument is negative, the opposite of the argument is returned.</p> <p>@ABS(5) gives 5                      @ABS(-5) gives 5</p>	
<p><b>@INT</b> — Gives the integer part of the argument. The decimal point and subsequent decimal digits are removed without being rounded off; an integer remains untouched.</p> <p>@INT(5) gives 5                      @INT(0.9) gives 0</p> <p>@INT(1.1) gives 1</p>	
<p><b>@SQUARE</b> — Gives the square of the argument. The argument multiplied by itself is returned; the result is always a positive number.</p> <p>@SQUARE(5) gives 25                      @SQUARE(-5) gives 25</p> <p>@SQUARE(0) gives 0</p>	
<p><b>@SQRT</b> — Gives the square root of the argument. The result multiplied by itself is equal to the argument. The argument may not be negative.</p> <p>@SQRT(25) gives 5                      @SQRT(2) gives 1.41421</p> <p>@SQRT(-25) is invalid</p>	
<p><b>@ROUND</b> — Rounds off the argument to the number of specified decimal places. Two data entries are required between the parentheses: the argument itself, and a direct number that specifies the number of decimal places. If that number is not an integer, it is first rounded off to the closest integer.</p> <p>@ROUND(1.66666,2) gives 1.67</p> <p>@ROUND(1.66666,3) gives 1.667</p> <p>@ROUND(1.66666,2.1) gives 1.67</p> <p>@ROUND(1.66666,2.5) gives 1.667</p>	

## Functions Using Multiple Arguments

<p><b>@AVG</b> — Gives the average value of the arguments. The sum of the arguments is calculated, and that sum is divided by the total number of arguments.</p> <p>@AVG(1,2,3,4) gives <math>(1+2+3+4)/4 = 2.5</math>          @AVG(175) gives <math>175/1 = 175</math></p>
<p><b>@COUNT</b> — Gives the number of non-blank cells. This function is an exception to the general rules in that: 1) the arguments MUST be cell addresses, and 2) the cell referred to can contain alphanumeric or numeric data.</p> <p>@COUNT(A1,A2,A3,A4) gives 3 if A1 contains 5 (numeric), A2 contains your name (alphanumeric), A3 contains ERROR (this is not a blank cell), and A4 is empty.</p>
<p><b>@IF</b> — Checks whether or not a specified condition is true, and displays a value that depends on the result of that check. The general form of this function is @IF(condition, argument1, argument2), meaning the following: if the "condition" is true, then display "argument1". If the condition is not true, then display "argument2". The "condition" is usually an arithmetic comparison, using two values (number or cell address) and one of the following comparison operators:</p> <p>= equal to      &lt;= less than or equal to          &lt; less than      &gt;= greater than or equal to          &gt; greater than      &lt;&gt; not equal to</p> <p>@IF(A1&gt;100,100,50) gives 100 if A1 is greater than 100, and 50 if A1 is equal to 100 or smaller than 100          @IF(A1&gt;100,100,A1) gives 100 if A1=200 and 60 if A1=60</p>
<ul style="list-style-type: none"> <li>"Argument2" can be omitted. In that case, the function returns "argument1" when the condition is true, and zero when the condition is not true.              @IF(A1 = 50,100) is equivalent to @IF(A1=50,100,0)</li> </ul>
<ul style="list-style-type: none"> <li>If "argument1" and "argument2" are both omitted, the function returns 1 when the condition is true, and zero when the condition is not true.              @IF(A1=50) is equivalent to @IF(A1=50,1,0)              100*@IF(A1=50) is equivalent to @IF(A1=50,100)</li> </ul>
<ul style="list-style-type: none"> <li>The "condition" can be a cell address. In that case, "argument1" and "argument2" must be omitted. The function returns 1 if the cell contains a numeric data, and zero if the cell contains alphanumeric data.              @IF(A1) gives 1 if A1=50 and gives 0 if A1 contains a label.</li> </ul>
<p><b>@MAX</b> — Gives the greatest argument (maximum). Remember that a positive argument is always greater than a negative one.</p> <p>@MAX(1,234) gives 234      @MAX(1,-99999) gives 1</p>
<p><b>@MIN</b> — Gives the smallest argument (minimum). Remember that a negative argument is always smaller than a positive one.</p> <p>@MIN(1,234) gives 1      @MIN(-1,99999) gives -1</p>

**@SUM** — Gives the sum of the arguments. This function is useful in shortening long sums when the arguments belong to a range.

@SUM(1,2,3,4,5) gives 15

@SUM(A1,A2,A3,B1,B2,B3) is equivalent to @SUM(A1..B3)

**@TSUM** — Gives the total sum of a range of cells, and also the sum of each row and column of the range if they contain data. This function is an exception to the general rules in that: 1) the argument **MUST** be a range, and 2) results are displayed not only in the selected cell (total sum), but also in the column to the right and in the row below the range. You must therefore be sure that the column to the right and the row below the range is empty.

Example:

1. Enter the numbers shown below in the range A1..C3, then enter @TSUM(A1..C3) in D4.

D4	@TSUM(A1..C3)							PITCH:10
	A	B	C	D	E	F	G	H
1	1	2	3					
2	4	5	6					
3	7	8	9					
4								

2. Press **RETURN**. The results appear as follows:

D4	@TSUM(A1..C3)							PITCH:10
	A	B	C	D	E	F	G	H
1	1	2	3	6				
2	4	5	6	15				
3	7	8	9	24				
4	12	15	18	45				

# Modifying a Spreadsheet

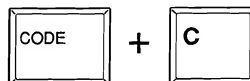
This section describes how to copy, move, or change data you have already entered in cells.

## Absolute and Relative Addresses

Whenever you change the layout of your spreadsheet, and copy the data within a cell, the cell references in the formulas are updated accordingly. Cell addresses that are updated are called relative addresses.

However, there may be times that you do not want the cell address in the formula updated. To prevent a cell address from being updated, you must designate the cell address as an absolute address. To designate an address as being absolute, place a \$ (dollar sign) at the beginning of the cell address in the formula.

## Copying One Cell to Other Cells



This function copies the contents of one cell into all the cells in a range. This function is particularly useful when you want to enter a formula into a range of cells. Keep in mind that if there is already data in the destination range, this operation *replaces* the old data with the new data.

1. Position the cursor on the cell that you want to copy.
2. Press **CODE** + **C**. The following message appears:

Mark range to be copied. Press RETURN when done.

3. Since you are copying the data from only one cell, press **RETURN** without moving the cursor. The following message appears:

Move block cursor to destination and press RETURN.

4. Move the cursor to the upper-left corner of the range where you want to copy the data. Press **CODE** + **L** (do not press **RETURN**). The following message appears:

Mark range of destination. Press RETURN when done.

5. Move the cursor to the lower-right corner of the range and press **RETURN**. The cell is copied to the destination range.

Example:

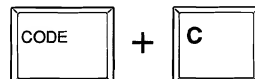
1. Enter the data shown below in A1..E1, then enter @SQUARE(A1) in A2.

A2	@SQUARE(A1)							PITCH:10
	A	B	C	D	E	F	G	H
1		1		2		3		4
2		1				5		

- Now copy the A2 to the range B2..E2. Use the RECALC function to update the results. (See "Recalculation," page 128.)

B2	@SQUARE(B1)							PITCH:10
	A	B	C	D	E	F	G	H
1		1		2		3		4
2		1		4		9		16
						25		

## Copying a Range of Cells



This function copies the contents of a range of cells into another range of cells. Keep in mind that if there is already data in the destination range, this operation *replaces* the old data with the new data.

- Position the cursor on a corner of the range that you want to copy.
- Press **CODE** + **C**. The following message appears:

Mark range to be copied. Press RETURN when done.

- Move the cursor to the opposite corner of the range and press **RETURN**. The following message appears:

Move block cursor to destination and press RETURN.

- Move the cursor to the upper-left corner of the destination range and press **RETURN**. The range is copied to the destination.

Example:

- Enter 3 in A1, 1 in A2, 2 in A3, then enter the formulas  $2 \times A2 + \$A1$  in B2 and  $2 \times A3 + \$A1$  in B3. The addresses A2 and A3 are relative while the address \$A1 is absolute. Relative addresses are updated when copied. Absolute addresses are never updated.

B3	2*3+\$A1							PITCH:10
	A	B	C	D	E	F	G	H
1		3						
2		1		5				
3		2		7				



- Copy the range B2..B3 to C2. Note that the formulas of C2 and C3 are  $2 \times B2 + \$A1$  and  $2 \times B3 + \$A1$ . Because \$A1 is an absolute address, it was not changed when copied. (See "Absolute and Relative Addresses," page 133.) Use the RECALC function to update the results. (See "Recalculation," page 128.)

C2	2*B2+\$A1							PITCH:10
	A	B	C	D	E	F	G	H
1		3						
2		1	5	13				
3		2	7	17				

## Moving a Range of Cells



This function moves the contents of a range of cells into another range of cells. Keep in mind that if there is already data in the destination range, this operation *replaces* the old data with the new data.

- Position the cursor on a corner of the range that you want to move.
- Press **CODE** + **E**. The following message appears:

Mark range to be moved. Press RETURN when done.

- Move the cursor to the opposite corner of the range and press **RETURN**. The following message appears:

Move block cursor to destination and press RETURN.

- Move the cursor to the upper-left corner of the destination range and press **RETURN**. The range is moved to the destination, and the range that you marked in steps 1, 2, and 3 is cleared.

Example:

- Enter the data shown below.

A1	1							PITCH:10
	A	B	C	D	E	F	G	H
1		1	3					
2		2	4					
3								
4								

- Now move the range A1 . . B2 to C1 . . D2.

C1 :	1							PITCH:10
	A	B	C	D	E	F	G	H
1				1	3			
2				2	4			
3								
4								

## Numbering a Range of Cells

MENU:	COLUMN	FORMAT	RECALC	SORT	CLEAR	CONVERT
-------	--------	--------	--------	------	-------	---------

The Fill function fills a range of cells with numbers. This function is useful when you want to quickly number rows or columns, or when you need numbers in a range to check the results of functions. The instructions below show how to use this function to create a one-month calendar for November, 1991.

1. Enter the data shown below and adjust the width of the columns as desired.  
(See "Adjusting the Column Width," page 140.)

A9 :	SAT							PITCH:10
	A	B	C	D	E	F	G	H
1	November							
2								
3	SUN							
4	MON							
5	TUE							
6	WED							
7	THU							
8	FRI							
9	SAT							

2. Move the cursor to B3 and press **MENU** to display the function menu.
3. Select COLUMN and press **RETURN**. The following menu appears:

MENU:	WIDTH	FILL	FREEZE	RELEASE
-------	-------	------	--------	---------

4. Select FILL and press **RETURN**. The following message appears:

Mark range to be filled. Press RETURN when done.

5. Move the cursor to F9 to mark the range B3..F9 and press **RETURN**. The machine asks you to enter a starting value.

The Fill function fills the marked range from the upper-left corner down, starts again from the top of the second column, and so on. To fill the marked range, three values are necessary: starting, jumping, and ending values. The starting value is written in the upper-left corner. The numbers are then calculated by adding the jumping value to the previously written value. Filling stops when the calculated value exceeds the ending value or when the marked range is filled, whichever comes first.

- Since November 1st is a Friday, enter -4 for the starting value. The machine asks you to enter the jumping value and the ending value. Enter 1 for the jumping value and 30 for the ending value. The range is filled as soon as you press **RETURN** to enter the ending value.

B3:-4.00000		PITCH:10						
	A	B	C	D	E	F	G	H
1	November							
2								
3	SUN	-4	3	10	17	24		
4	MON	-3	4	11	18	25		
5	TUE	-2	5	12	19	26		
6	WED	-1	6	13	20	27		
7	THU	0	7	14	21	28		
8	FRI	1	8	15	22	29		
9	SAT	2	9	16	23	30		

- Delete the contents of cells B3, B4, B5, B6, and B7.

## Clearing a Range of Cells

MENU	COLUMN	FORMAT	RECALC	SORT	CLEAR	CONVERT
------	--------	--------	--------	------	-------	---------

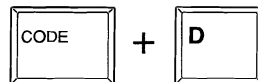
The CLEAR option of the function menu allows you to quickly clear a range.

- Position the cursor on a corner of the range to be cleared and press **MENU** to display the function menu.
- Select CLEAR and press **RETURN**. The following message appears:

Mark range to be cleared. Press RETURN when done.

- Move the cursor to the opposite corner of the range and press **RETURN**. The range is cleared. Bold, underline, and format (currency, percentage, etc.) specifications are cleared along with the data.

## Deleting Rows and Columns



This function not only clears the contents of cells, but eliminates the rows and columns from the spreadsheet. Existing data in cells beyond the deleted rows or columns moves up or to the left.

1. Press **CODE** + **D**. The following menu appears:

MENU:	ROWS	COLUMNS
-------	------	---------

2. Select **ROWS** to delete rows, or **COLUMNS** to delete columns, and press **RETURN**. The following message appears:

Position block cursor. Press RETURN when done.
--

3. Position the cursor anywhere in the first row or column to be deleted and press **RETURN**. The machine asks you to specify the number of rows or columns to delete, for example:

Number of rows to delete : 2
------------------------------

4. Type the number and press **RETURN**. The specified number of rows or columns are deleted. Existing data past the deleted rows or columns are pulled up or to the left and any moved formula is updated.

Example 1:

1. Enter the data shown below in the range A1..B3, then enter the formula @SUM(A1..B3) in cell C5.

C5	@SUM(A1..B3)							PITCH:10
	A	B	C	D	E	F	G	H
1	1	4						
2	2	5						
3	3	6						
4								
5								

2. Now delete row 2 and use the RECALC function to update the results.

C4	@SUM(A1..B2)							PITCH:10
	A	B	C	D	E	F	G	H
1	1	4						
2	3	6						
3								
4								
5								

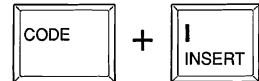
- When a function is defined on a range, like in the above example, you cannot delete a row or a column that contains a corner of the range.

Example 2:

- Using the same initial data as in the above example, delete row 1.

C4	@SUM(?. .B2)							PITCH:10
	A	B	C	D	E	F	G	H
1		2	5					
2		3	6					
3								
4								
5								

## Inserting Blank Rows and Columns



This function inserts blank rows or columns anywhere in the spreadsheet.

- Press **CODE** + **INSERT** () . The following menu appears:

MENU:	ROWS	COLUMNS
-------	------	---------

- Select **ROWS** to insert blank rows, or **COLUMNS** to insert blank columns, and press **RETURN**. The following message appears:

Position block cursor. Press RETURN when done.

- Position the cursor anywhere in the first row or column where you want the new rows or columns inserted and press **RETURN**. The machine asks you to specify the number of rows or columns to insert, for example:

Number of rows to insert :

- Type the number and press **RETURN**. The specified number of blank rows or columns are inserted. Existing data beyond the inserted rows or columns are pushed down or to the right.

Example 1:

- Enter the data shown below in the range A1..B2, then enter the formula @SUM(A1..B2) in cell C3.

C3	@SUM(A1..B2)							PITCH:10
	A	B	C	D	E	F	G	H
1	1	3						
2	2	4						
3								
4								

- Now insert a blank row between row 1 and row 2.

C4	@SUM(A1..B3)							PITCH:10
	A	B	C	D	E	F	G	H
1	1	3						
2	2	4						
3			10					

Example 2:

1. Enter the data shown below in the range A2..B2, then enter the formula (A2\*B2) in C2.

C2	(A2*B2)							PITCH:10
	A	B	C	D	E	F	G	H
1								
2	300	0.8	240					
3								

2. Now insert a blank column between column A and column B.

D2	(A2*C2)							PITCH:10
	A	B	C	D	E	F	G	H
1								
2	300		0.8	240				
3								

- If the insertion you want to make exceeds the limitations of the spreadsheet, the data in the rows or columns on the far edge are lost. The system warns you of this, and allows you to choose whether to cancel the insertion or allow the data to be lost:

Insert will result in data loss. RETURN to insert or CANCEL to quit.

## Adjusting the Column Width

MENU	COLUMN	FORMAT	RECALC	SORT	CLEAR	CONVERT
------	--------	--------	--------	------	-------	---------

The default width of a column is 10 characters. However, you can adjust the width of a column to accommodate the data that you will enter or the data that is already in the cell. Note that it is not possible to change the width of an individual cell without changing the width of the entire column to which the cell belongs.

Although a cell can hold a maximum of 55 characters (the maximum length of the Input Area), all of the characters cannot be displayed if there is data in the cells to the right. However, the data remains resident in the cell and is displayed in the Input Area when the cursor is in that cell.

1. Position the cursor anywhere within the column you want to change and press **MENU** to display the function menu.

2. Select COLUMN, and press **RETURN**. The following menu appears:

<b>MENU:</b>	<b>WIDTH</b>	FILL	FREEZE	RELEASE
--------------	--------------	------	--------	---------

3. Select WIDTH and press **RETURN**. The letter of the column appears in the Input Area, followed with a number indicating its current width.

Column : A	Width : 10
------------	------------

Mark columns for width change. Press RETURN when done.
--

4. Use **←** or **→** to mark the column that you want to change, and press **RETURN**. The marked columns are indicated in the Input Area (for example, A-C if you marked columns A, B, and C).

New width A-C : 2
-------------------

Enter new column width and press RETURN.
--

5. Type the new width in the Input Area (maximum 55 characters) and press **RETURN**. The width of the marked columns is adjusted.

## Freezing and Releasing Columns

<b>MENU:</b>	<b>COLUMN</b>	FORMAT	RECALC	SORT	CLEAR	CONVERT
--------------	---------------	--------	--------	------	-------	---------

Because a spreadsheet can be wider than the display screen, you may only be able to display a part of the spreadsheet at one time. Freezing columns allows you to keep the first column(s) of the spreadsheet on the screen while editing the rightmost columns.

### Freezing

1. Press **MENU** to display the function menu.
2. Select COLUMN, and press **RETURN**. The following menu appears:

<b>MENU:</b>	WIDTH	FILL	<b>FREEZE</b>	RELEASE
--------------	-------	------	---------------	---------

3. Select FREEZE and press **RETURN**. The system asks you to indicate the columns to be frozen. The following message appears:

Move block cursor to right of columns to be frozen and press RETURN.
--

4. Freezing always affects the first columns, from column A to the column just before the column that you choose at this step. Position the cursor and press **RETURN**. An indicator tells you which columns are frozen.
5. Now, if you move the cursor to the rightmost columns, you will still see the frozen columns on screen.
  - Only one group of columns can be frozen at a time. Rows cannot be frozen.

## Releasing

When you want to edit the data in the frozen columns, you must "release" the frozen columns. Proceed as for freezing, but select **RELEASE** in step 3. The following message appears:

Frozen columns have been released.

## Sorting and Selecting Data

<b>MENU:</b>	COLUMN	FORMAT	RECALC	<b>SORT</b>	CLEAR	CONVERT
--------------	--------	--------	--------	-------------	-------	---------

The Sort and Select functions are used on data you have already entered on the spreadsheet. The Sort function allows you to organize data in either alphabetic or numeric order. The Select function allows you to print numeric data that meets certain criteria. "Sort and Select" allows you to do both in one operation.

### Sorting a Range

This function sorts data into alphabetic or numeric order or reverse order. For our example, it is a good idea to make several copies of the data (using the Copy function or **CODE** + **C**), so that you can try several different ways to sort the information.

The example in the following instructions sorts a grid of names, addresses, and zip codes.

1. Enter the data as shown below.

	A	B	C	D	E
1	:Marsh	:Henry	:Miami	:OH	:45342
2	:Anderson	:John	:Denver	:CO	:82222
3	:Jackson	:Howard	:Stanford	:CA	:56904
4	:Bennet	:William	:Westfield	:NJ	:28854
5	:Higgins	:Ruth	:Cambridge	:MA	:11000
6	:Carter	:David	:Dallas	:TX	:76021
7	:Bender	:William	:Freeport	:VT	:66622
8	:Lee	:Kevin	:Dallas	:TX	:76021

2. Position the cursor on A1 and press **MENU** to display the function menu.



3. Select SORT and press **RETURN**. The following menu appears:

MENU:	<b>SORT</b>	SELECT	SORT & SELECT
-------	-------------	--------	---------------

4. Select SORT and press **RETURN**. The following message appears:

Mark range to be sorted. Press RETURN when done.

In this example, we will sort the data in alphabetical order by last names (Column A). However, it is necessary to mark all the columns so that all the data moves together with the names.

5. Move the cursor to E8 to mark the range A1..E8, and press **RETURN**. The system asks you to enter the name of the column to be used as a primary key.

Primary key : **A**

Enter column of primary sort key and press RETURN.

Since we are sorting the data by last names, which appears in column A, column A is called the primary key. The primary key must always be in the marked range.

You can also perform "double sorting". For example, if two or more persons have the same last name, both a primary and a secondary sort are required. In this case, the first name (column B) is the secondary key.

6. Type A for the primary key and press **RETURN**. The system asks you to enter the column to be used as a secondary key.

Secondary key : **B**

Enter column of secondary sort key and press RETURN.

7. Enter B for the secondary key and press **RETURN**. (If you do not want a secondary sort to take place, simply press **RETURN** without entering a secondary key.) The following menu appears:

MENU:	<b>ASCENDING</b>	DESCENDING
-------	------------------	------------

If you select ASCENDING, the data will be arranged in alphabetical order. If you select DESCENDING, the data will be arranged in reverse alphabetical order.

8. Select ASCENDING and press **RETURN**. The following menu appears:

MENU:	ALPHABETIC	NUMERIC
-------	------------	---------

9. Since the data is alphanumeric, select ALPHABETIC and press **RETURN**. Your data will be alphabetically arranged.

	A	B	C	D	E
1	:Anderson	:John	:Denver	:CO	:82222
2	:Bender	:William	:Freeport	:VT	:66622
3	:Bennet	:William	:Westfield	:NJ	:28854
4	:Carter	:David	:Dallas	:TX	:76021
5	:Higgins	:Ruth	:Cambridge	:MA	:11000
6	:Jackson	:Howard	:Stanford	:CA	:56904
7	:Lee	:Kevin	:Dallas	:TX	:76021
8	:Marsh	:Henry	:Miamiburg	:OH	:45342

You may, of course, use both alphabetic and numeric, ascending and descending sorts to organize the data. You can also use different primary and secondary keys to put your data in the most convenient order for your purpose.

### Selecting Data from a Range

The SELECT option in the SORT menu allows you to print rows of data that match certain criteria. This option can only be used on numeric data. In the previous example, you can print a list of people who reside in a certain zip code.

1. Position the cursor on a corner of the range you want to select from, then press **MENU** to display the function menu.
2. Select SORT and press **RETURN**. The following menu appears:

MENU:	SORT	SELECT	SORT & SELECT
-------	------	--------	---------------

3. Choose SELECT and press **RETURN**. The following message appears:

Mark range to select from. Press RETURN when done.
--

4. Move the cursor to the opposite corner of the range and press **RETURN**. The system asks you to enter the name of the column to be used.

Select Column A-E : <b>E</b>
------------------------------

5. Type a letter (E for this example) and press **RETURN**. A menu of matching conditions appears:

MENU:	EQUAL	NOT EQUAL	LESS	GREATER	BETWEEN	NOT BETWEEN
-------	-------	-----------	------	---------	---------	-------------

If you select EQUAL, NOT EQUAL, LESS, or GREATER, the system asks you to enter a numeric value. If you select BETWEEN or NOT BETWEEN, you are requested to enter the limit values of the bracket.

- For this example, select EQUAL and press **RETURN**. The system asks you to enter the value.

Equal to :

- For this example, we want a list of people whose zip code is 76021. Type 76021 and press **RETURN**. You are now requested to insert paper.

Insert paper and press RETURN.

- Insert paper and press **RETURN**. Change the daisy wheel as required and press **RETURN** again. The printout will look as follows:

Carter	David	Dallas	TX	76021
Lee	Kevin	Dallas	TX	76021

## Sorting and Selecting Data from a Range

MENU SORT SELECT **SORT & SELECT**

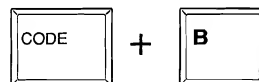
The Sort & Select option allows you to sort and select in one operation. This is useful when you want a selected printout to be sorted. To try this option, use a copy of the data in the previous example.

After you select SORT & SELECT, the machine first sorts the data and then selects according to the specified criteria. Simply follow the instructions for the option SORT, then the instructions for the option SELECT.

## Bold and Underlined Text

You can make the text in one cell or a range of cells bold or underlined.

### Bold



- Move the cursor to a corner of the range that you want to make bold.
- Press **CODE** + **B**. The following menu appears:

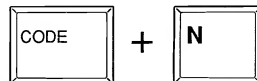
MENU **BOLD ON** BOLD OFF

- Select BOLD ON and press **RETURN**. The following message appears:

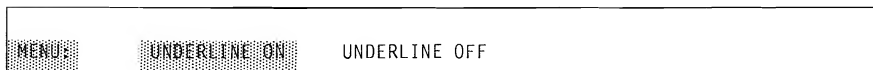
Mark range to be bolded. Press RETURN when done.

4. Move the cursor to the opposite corner of the range and press **RETURN**. The cells of the range which already contain data appear in bold-face characters. Empty cells are unchanged, but if you input data in one of them, the data will appear in bold.
  - To remove the bold from a range of cells, proceed in the same way as above, but select BOLD OFF in step 3.

## Underline



1. Move the cursor to a corner of the range that you want to underline.
2. Press **CODE** + **N**. The following menu appears:



3. Select UNDERLINE ON and press **RETURN**. The following message appears:

Mark range to be underlined. Press RETURN when done.

4. Move the cursor to the opposite corner of the range and press **RETURN**. The cells of the range are underlined. If you want to underline one cell only, press **RETURN** without moving the cursor.
  - To remove underlining from a range of cells, proceed in the same way as above, but select UNDERLINE OFF in step 3.

# Managing Spreadsheet Files

## Saving a Spreadsheet



1. When your spreadsheet is complete, press **FILE**. The following message appears:

Insert data disk. Press RETURN to save, press CORRECT to abandon.

2. Insert a data disk and press **RETURN**.
3. The SPREADSHEET INDEX screen appears and displays a list of spreadsheet files already stored on the disk. You are prompted to enter a file name:

Type filename and press RETURN.  
FILENAME :

4. Type a file name and press **RETURN**. (For information on valid file names, see "Entering a File Name," page 106.) The file is saved on the disk and the SPREADSHEET INDEX screen list is updated.

- If you type a file name that exists already, the machine asks you if you want to overwrite the old file:

Overwrite. Press RETURN to overwrite.

Press **RETURN** to replace the old file with the new one, or press **CANCEL** to quit.

- If there is not sufficient space remaining on the disk for the file you want to save, the system informs you and prompts you to insert a new disk:

Disk is full, please try again with new disk. Press RETURN.

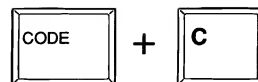
If you want to save the file, insert a new disk and type a file name again.

## Retrieving a File



1. After entering Spreadsheet mode, remove the Spreadsheet disk and insert the disk containing the file you want to retrieve.
2. Move the cursor to the file you want to retrieve and press **RETURN**. The spreadsheet appears on the screen.

## Copying a File



<b>MENU:</b>	EXIT	<b>COPY</b>	DELETE	RENAME	CONVERT	ALL DELETE	PRINT
--------------	------	-------------	--------	--------	---------	------------	-------

1. Display the SPREADSHEET INDEX screen. Insert the disk containing the file you want to copy.
2. Move the cursor to the file you want to copy. Press **MENU** to display the function menu.
3. Select COPY and press **RETURN**. The following message appears:

Insert destination disk and press RETURN.

Short cut: Instead of steps 2 and 3, press **CODE** + **C**.

4. To copy the spreadsheet file, insert the destination data disk. Press **RETURN**.
5. The SPREADSHEET INDEX screen appears and you are prompted to enter a new file name for the copied file.

Type new filename and press RETURN.  
FILENAME: XXXXXXXX

6. Type a new file name and press **RETURN**. If you enter a file name that already exists on the disk, the following message appears:

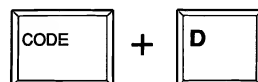
Overwrite. Press RETURN to overwrite.

7. Press **RETURN** to overwrite the file. The system tells you when the operation is completed.

Copying completed.

- If you want to save the file with a different file name, press **CANCEL**. The system asks you to enter a new file. Type a new file name and press **RETURN**.

## Deleting a File



<b>MENU:</b>	EXIT	COPY	<b>DELETE</b>	RENAME	CONVERT	ALL DELETE	PRINT
--------------	------	------	---------------	--------	---------	------------	-------

1. Display the SPREADSHEET INDEX screen. Insert the disk containing the file you want to delete.
2. Move the cursor to the file you want to delete. Press **MENU** to display the function menu.
3. Select DELETE and press **RETURN**. The following message appears:

Delete? Press RETURN(yes) or CANCEL(no).

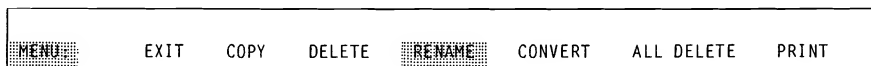
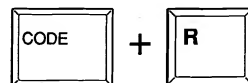
Short cut: Instead of steps 2 and 3, press **CODE** + **D**.

4. Press **RETURN** to confirm. The file is deleted and the Spreadsheet Index is updated.

### Note

You are not able to delete a Spreadsheet template file.

## Renaming a File



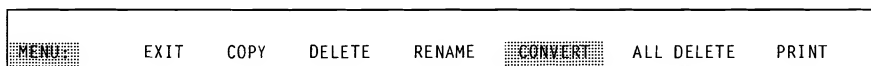
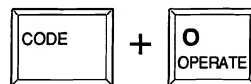
1. Display the SPREADSHEET INDEX screen. Insert the disk containing the file you want to rename.
2. Move the cursor to the file you want to rename. Press **MENU** to display the function menu.
3. Select RENAME and press **RETURN**. The following message appears:

Type new filename and press RETURN.  
FILENAME:

Short cut: Instead of steps 2 and 3, press **CODE** + **R**.

4. Type a new file name, and press **RETURN**.

## Converting a Spreadsheet into a Word Processing File



### Converting an Entire Spreadsheet

After you save a spreadsheet on a disk, you can convert the spreadsheet file into a word processing file. You can then retrieve the file in Word Processing mode and add text if you wish.

1. Display the SPREADSHEET INDEX screen. Insert the disk containing the file you want to convert.
2. Move the cursor to the file you want to convert. Press **MENU** to display the function menu.
3. Select CONVERT and press **RETURN**. The following message appears:

Insert destination disk and press RETURN.

Short cut: Instead of steps 2 and 3, press **CODE** + **O**.

4. To store the converted file on the same disk, simply press **RETURN**. To store the converted file on a different disk, insert the new disk and press **RETURN**.
5. The WP INDEX screen appears and you are prompted to enter a file name for the converted file.

Type new filename and press RETURN.  
FILENAME:XXXXB

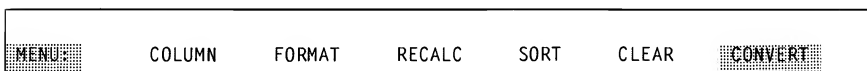
6. Type a new file name and press **RETURN**. While the file is being converted, the following message is displayed:

Converting the file....please wait.

When the conversion is completed, the following message appears:

Converting completed.

## Converting Part of a Spreadsheet



If you want to use a part of a spreadsheet in a word processing document, you can define a range of cells while the spreadsheet is displayed on the screen, and convert that range into a word processing file. You can then retrieve that file in Word Processing mode and add text.

1. While the spreadsheet is displayed on the Input/Edit screen, position the cursor on a corner of the range that you want to convert and press **MENU** to display the function menu.
2. Select CONVERT and press **RETURN**. The following message appears:

Mark range to convert. Press RETURN when done.

3. Move the cursor to the opposite corner of the range and press **RETURN**. The following message appears:



Insert destination disk and press RETURN.

4. To store the converted file, insert the destination data disk. Press **RETURN**.
5. The WP INDEX screen appears and you are prompted to enter a file name for the converted file.

Type new filename and press RETURN.  
FILENAME:XXXX

6. Type a new file name and press **RETURN**. The following message appears while the file is converted:

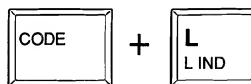
Converting the file....please wait.

When the conversion is completed the following message appears:

Converting completed.

The message disappears as soon as you press any key.

## Deleting All Spreadsheet Files



**MENU:** EXIT COPY DELETE RENAME CONVERT **ALL DELETE** PRINT

To delete all Spreadsheet files on the disk:

1. Display the SPREADSHEET INDEX screen. Insert the disk containing the files you want to delete. (a data disk other than the original disk shipped with your machine.)
2. Press **MENU** to display the function menu.
3. Select **ALL DELETE** and press **RETURN**. The following message appears:

Delete all files on this index? Press RETURN(yes) or CANCEL(no).

Short cut: Instead of steps 2 and 3, press **CODE** + **L**.

4. Press **RETURN** to confirm. All Spreadsheet files on the disk are deleted (all other files remain on the disk) and the SPREADSHEET INDEX screen is updated.

### Note

You are not able to delete all spreadsheet files from the disk that was shipped with your machine. This disk contains the spreadsheet templates.

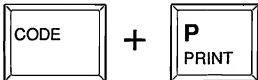
# Printing a Spreadsheet



There are two methods for printing a spreadsheet:

- You can print the entire spreadsheet file from the SPREADSHEET INDEX screen.
- While you are editing the spreadsheet on the Input/Edit screen, you can define a range of cells and print only that range. This is a useful tool while creating a spreadsheet if you want to see how the spreadsheet will look on paper.

## Printing an Entire Spreadsheet



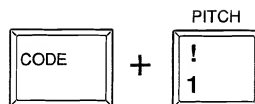
1. Display the SPREADSHEET INDEX screen. Insert the disk containing the file you want to print.
2. Move the cursor to the file you want to print. Press **MENU** to display the function menu.
3. Select PRINT and press **RETURN**. The following message appears:

Insert paper and press RETURN.

Short cut: Instead of steps 2 and 3, press **CODE** + **PRINT** (**P**).

4. Insert a sheet of paper and press **RETURN**. The system prompts you to insert a standard daisy wheel (KB I) of the appropriate pitch. Install the wheel and press **RETURN**, or press **RETURN** if the correct daisy wheel is already installed.
  5. During printing, you can press **(SPACEBAR)** to pause and resume printing. You can also press **CANCEL** to stop printing.
- If the data exceeds the printing capabilities, the columns exceeding the limit will be truncated. You cannot change the pitch from the SPREADSHEET INDEX screen. If the spreadsheet is too wide, try inserting paper horizontally. If it is still too wide, display the spreadsheet on the Input/Edit screen and select a higher pitch, or print only a range of the spreadsheet.
  - You can enter page break symbols (↓) to signal the printer to stop printing for a paper change.

## Printing Part of a Spreadsheet



Before you print, you can use **CODE** + **PITCH** (**!**) to adjust the pitch to 10, 12, or 15 characters per inch.

You can also split your spreadsheet manually by inserting page break symbols (**↓**) with **CODE** + **PBREAK**.

1. Move the cursor to a corner of the range that you want to print and press **CODE** + **PRINT** (**P**). The following message appears:

Mark range to print. Press RETURN when done.

2. Move the cursor to the cell in the opposite corner of the range and press **RETURN**. The following message appears:

Insert paper and press RETURN.

3. Insert paper and press **RETURN**. If the spreadsheet is too wide, you may need to insert the sheet of paper horizontally. The machine asks you to match the daisy wheel to the selected keyboard and pitch, for example:

Change to KB:I 10 wheel and press RETURN.

4. Make sure that the daisy wheel installed matches the message specifications, and press **RETURN**. Printing starts.
  - To pause during printing, press **SPACE BAR**. Press the same key to restart printing. To cancel printing, press **CANCEL**.

# Using Templates

---

To help you create your spreadsheet, templates for the most common spreadsheet uses are provided. A template provides a skeleton spreadsheet that includes many of the labels and formulas you will need. You can modify the format, formulas, or any other part of the template before or as you enter data. Enter and edit your data like on any other spreadsheet, and use the RECALC function (see "Recalculating," page 128) to display calculation results.

After you have completed your work on the template, you can save the spreadsheet to a disk under a different name, and convert or print the spreadsheet like any other spreadsheet file.

## Template Descriptions

**INTRO** — This file actually contains an introduction to Spreadsheet mode. It summarizes the features and capabilities of this mode.

**TELEPHONE AND ADDRESS DIRECTORY** — This template allows you to keep an organized listing of names and addresses. With the sort capability, you can rearrange this file alphabetically after each addition or edit.

**CHECKBOOK** — This template resembles the records that you receive from your bank. It calculates the balance after you input your deposits and withdrawals. After entering your deposits and withdrawals, select RECALC from the Spreadsheet menu to process the balance column.

**MONTHLY BUDGETING** — This template helps you keep your personal finances in order. It outlines typical monthly expenses, and allows you to calculate your total monthly budget.

**SALES ANALYSIS** — This template helps monitor actual versus projected sales results. Enter the data for all the cells with the exception of the cells containing formulas (zeros).

**ANNUAL YIELD (COMPOUND)** — This template figures annual yield according to the annual interest rate. Simply type in the annual interest rate and use RECALC to determine the results.

**SAVING PLANNER** — This template calculates your savings over a specified period of time. Simply enter the requested data, and use the RECALC function to determine the results.

**MONTHLY PAYMENT OF LOAN** — This template calculates your monthly payments and lists the amount of interest and principal paid per month for one year. Enter the requested data. Use the RECALC function to see the results for one year.

## Displaying a Template

1. Insert the Template disk.
2. Select SPREADSHEET from the MAIN MENU and press **RETURN**. The SPREADSHEET INDEX screen appears displaying the index of spreadsheet templates.
3. Move the cursor to the template you want to use and press **RETURN**. The spreadsheet template appears on the screen. Move the cursor around the screen to view the formulas in the cells. Never type the data into cells that contain formulas.
4. Insert any data to personalize the template for your own needs and press **MENU** to display the function menu.
5. Select RECALC and press **RETURN** to calculate your results.
6. Press **FILE** to save your data.
7. Insert the data disk that you wish this file saved on and press **RETURN**.
8. Type a new file name. (Pressing the **WORD OUT** key will erase the template name from the file name line.) You MUST save the personalized version of your spreadsheet with a different name than the original template file.
9. Press **RETURN** to save the file.

### Note

You are not able to overwrite a template file.

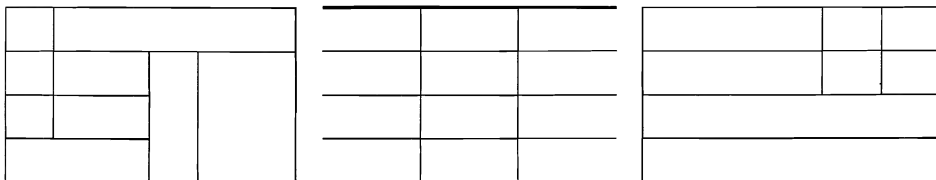
## CHAPTER 6

# Framing

---

### The Framing Mode

The Framing mode allows you to create, edit, save and print "frames" consisting of single or double horizontal lines and single vertical lines. Frames are most often used for forms, charts, and tables.



You cannot display both text and frames on the screen, combine them in a file, or print them at the same time. However, once you have printed a frame, you can use the Typewriter mode to add text.

**To create frames containing vertical or double horizontal lines, you must use the International (KB:II) or Symbol (KB:III) keyboard setting. You must insert an International or Symbol daisy wheel to print the frame.** If you print the frame without using the International or Symbol daisy wheel, vertical lines are printed using periods, and double horizontal lines are printed as single lines.

### On-Screen Help

If you need help remembering which functions are available in Framing mode and how to perform them using short cuts, press **CODE** + **HELP** (**H**). When the list of topics appears, press **F**.

### Creating or Editing a Frame

To create or edit a frame:

1. Select FRAMING from the MAIN MENU and press **RETURN**. The FRAMING INDEX screen appears.

```

<< FRAMING INDEX >>                                REMAIN:XXX.XK

*NEWFILE      FRAMING1.FRM(XX.X)    FRAMING2.FRM(XX.X)
FRAMING3.FRM(XX.X)

Select a file and press RETURN. Press CANCEL to display MAIN MENU.

```

This screen lists the files on the disk created in Framing mode. From this screen you can retrieve an existing file, create a new frame, or exit from Framing mode. You can also perform various file functions, including copying, deleting, renaming, printing a file, or deleting all the Framing files on the disk. (For more detailed procedures, see the corresponding sections in the Word Processing chapter.)

2. To create a new frame, select \*NEWFILE. To edit an existing frame, move the cursor to the frame file you want to edit. Press **RETURN**.

The Framing Input/Edit screen appears.

- The cursor is positioned in the upper left hand corner.
- The MOVE mode is active.

```

*NEWFILE      L:1 COL:1 PITCH:XX L.SP:X.X KB:XX MOVE/HORIZONTAL LINE:
0.....1.....2.....3.....4.....5.....6.....7.....8.....9
B

Press ↑, ↓, ←, → to move cursor, add or delete line. Press CORRECT to switch
MOVE/ADD/DEL. Press SPACE to change horizontal line. Press FILE to finish.

```

## Framing Functions

You create and edit a frame using three modes: MOVE, ADD, and DEL (delete). Each function uses its own unique cursor.

Mode	Cursor	Function
MOVE	␣	Moves the cursor without drawing lines.
ADD	⌞	Draws vertical and horizontal lines.
DEL	⌘	Deletes vertical or horizontal lines.























To switch from function to function, press **CORRECT** one or more times until the function you want appears on the Status Line. The functions appear in the following order:

MOVE → ADD → DEL → MOVE




## Other Keys Used in Framing

The following keys are used to create a frame:

## Framing Mode Keys

Keys	Function
   	<p>To draw a line, switch to ADD mode. Press and hold down the cursor key to draw a line in the direction of the arrow. To delete a line, switch to DEL mode. Move the appropriate cursor along the line you want to delete ( and  to delete horizontal lines;  and  to delete vertical lines.) To move the cursor without drawing a line, switch to MOVE mode and use any of the cursor keys.</p>
 +    	<p>In MOVE, ADD, or DEL modes, causes the cursor to jump from (existing) line to line without drawing a line. Hold down the  key and press any of the cursor keys to jump to the line in the direction of the arrow. If there is no line, the cursor jumps to either Column 1, Line 1, Column 135, or Line 73.</p>
	<p>Switches between single and double horizontal line. The LINE indicator on the message line shows the "—" for single line or "==" for double line.</p>
	<p>Moves the cursor in any mode (MOVE, ADD or DEL) to the left end of the following line.</p>
 +  (   ( 	<p>Sets or clears a tab at the cursor position. A framing tab stop "I" appears at the corresponding position on the scale line. Up to 30 tabs can be set.</p>
	<p>Moves the cursor in any mode (MOVE, ADD, or DEL) to the next tab stop to the right. If there is no tab set to the right of the cursor, the cursor moves to the right end (the 135th column).</p>

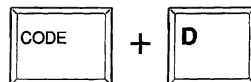
### Drawing a Frame

1. In MOVE mode, move the cursor to the starting point of a vertical or horizontal line.
2. Use  to switch to ADD mode.
3. Move the cursor to draw the line and stop when you arrive at the desired end of the line. For a horizontal line, use  to switch between a single and double line.
4. Use  to switch to the MOVE mode and repeat steps 1 to 3 to draw all the lines in your frame.

To delete a line, switch to the MOVE mode, position the cursor on the line to be deleted, then switch to the DEL mode and move the cursor along the line. Switch back to the MOVE mode when the line is deleted.



## Deleting All Lines



PRINT ALL DELETE

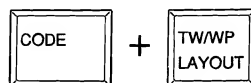
1. Press **MENU** to display the function menu.
2. Select ALL DELETE and press **RETURN**. The following message appears:

Delete? Press RETURN(yes) or CANCEL(no).

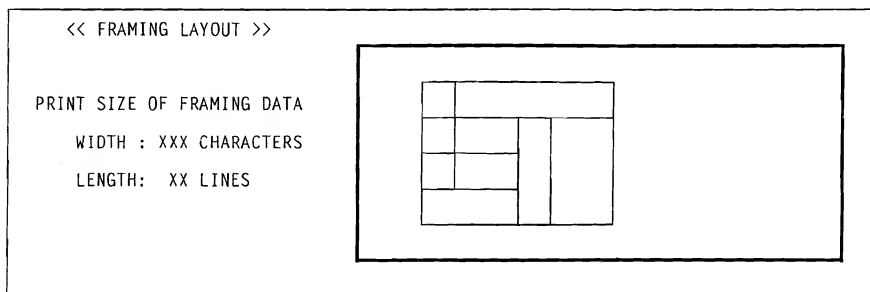
Short cut: Instead of steps 1 and 2, press **CODE** + **D**.

3. Press **RETURN** to delete or **CANCEL** to quit.

## Previewing a Frame



1. While editing a frame, press **CODE** + **LAYOUT** (**TW/WP**) to switch to the preview screen. The FRAMING LAYOUT screen appears and displays the frame in reduced scale.



2. To return to the Framing screen, press **RETURN**, **CANCEL**, or **CODE** + **LAYOUT** (**TW/WP**).

## Saving a Frame File

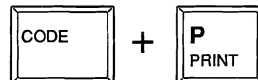
When the frame is complete, press **FILE** to save the file and proceed as you would with any Word Processing file. (See "Saving a New Document," page 105.)

## Loading a Frame File

To load a frame file:

1. Insert the disk that contains the frame file you want to edit.
2. Select the file name from the FRAMING INDEX screen and press **RETURN**. The file appears on the screen.

## Printing a Frame



You can print a frame while it is displayed on the screen or save the frame on a disk and print the frame file.

To properly print a frame containing vertical and double horizontal lines, you must use an International or Symbol daisy wheel.

### Printing a Frame from the Framing Screen



1. Press **MENU** to display the function menu.

2. Select **PRINT** and press **RETURN**.

Short cut: Instead of steps 1 and 2, press **CODE** + **PRINT** (**P**).

3. Follow the instructions that appear on the screen.

### Printing a Framing File from the FRAMING INDEX Screen

1. Save the frame on a disk, and print the file as you would print a Word Processing file. (See "Printing Documents," page 99.) The following message appears:

Insert paper. Select pitch. Move carriage to starting position, press RETURN.

2. Insert paper.

3. Use **CODE** + **PITCH** (**I**) to select the pitch.

4. Use **SPACEBAR**, **BACKSPACE**, **CODE** + **BS1** (**BACKSPACE**), **CODE** + **P DOWN** (**CANCEL**), and **CODE** + **P UP** (**MENU**) to position the carrier on the paper at the point where you want the frame to start (the upper-left corner of the frame).

5. Press **RETURN**. A message similar to the following appears:

Change to KB:II 10 wheel and press RETURN.

6. Change to the appropriate daisy wheel and press **RETURN** to begin printing.

- If the carriage is in a position at which the frame would extend beyond the right end of the printer when printed, the following message appears on the message line:

Unable to print. Press CANCEL to exit or press RETURN to print.

Press **CANCEL** to display the FRAMING INDEX screen.

If you press **RETURN** instead, the following message appears.

Select pitch. Move carriage to starting position, press RETURN.

Follow the procedures described in steps 3 to 6.

- There is no page or margin control. The number of columns cannot be changed, even if the pitch setting is changed.

## CHAPTER 7

# Disk Utilities

---

### The Disk Utility Mode

The Disk Utility mode allows you to view all files contained on a disk, and to copy, delete, or rename those files. In addition, this mode allows you to copy all files contained on a disk onto another disk or to delete all the files at one time. However, you cannot display or print a file from this mode.

### Viewing All Files on a Disk

To view the list of files on a disk, insert the disk and select DISK UTILITY from the MAIN MENU. A screen similar to the following appears:

```
<< DISK UTILITY >>

TEXT      (XX.X)   TEXT2      (XX.X)   SALES     .SD2 (XX.X)
CHECKS .SD2 (XX.X) TABLE1   .FRM (XX.X)

Select a file and press MENU. Press CANCEL to display MAIN MENU.
```



As shown in the sample above, file names stored on the disk appear in this order: Word Processing files, Spreadsheet files, and Framing files.

### File Extensions

The names of files stored on the disk are followed with a file name extension that is added by the machine when you save a file. These extensions allow you to distinguish between the different types of files. The following table lists these extensions:

Extension	Type of File
No extension	Word Processing
.SD2	Spreadsheet
.FRM	Framing

The number displayed in parentheses to the right of each file name indicates the size of the file in kilobytes.

To select a file name, move the cursor to the file with the cursor keys. If you have more files on the disk than can be displayed on the screen at one time, press **CODE** + **PREV** () or **CODE** + **NEXT** () to scroll the display.

## Exiting the Disk Utility Mode

To exit the Disk Utility mode and return to the MAIN MENU, press **CANCEL** or select EXIT from the function menu.

## File Options

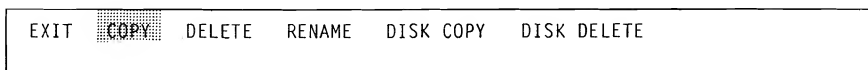
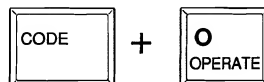
From the DISK UTILITY screen, you can copy, delete, or rename any file on the disk. Use the procedures described in "Managing Files," page 108.

### Note

You are not able to delete the spreadsheet template files contained on the disk shipped with your machine.

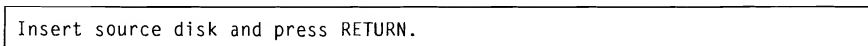
## Disk Options

### Disk Copy



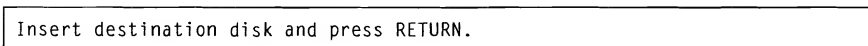
This function allows you to make back-up copies of important disks. It is a good idea to make back-up copies in case the original disks are damaged or accidentally erased.

1. Press **MENU** to display the function menu.
2. Select DISK COPY and press **RETURN**. The following message appears:



Short cut: Instead of steps 1 and 2, press **CODE** + **O**.

3. Insert the source (original) disk and press **RETURN**. The machine copies the disk data into memory. The following message appears:



### WARNING

**Copying an entire disk to another destroys any data that may be on the destination disk. Check the destination disk before starting. Be sure your destination disk has been initialized and formatted.**

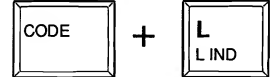
4. Insert the destination disk and press **RETURN**. The following prompt to appears:

Insert source disk and press RETURN.

Repeat steps 3 and 4 until all data has been copied. Since the memory can only hold a certain amount of data at one time, you will need to alternately insert the source (original) and destination disks several times, regardless of the amount of data to be copied.

5. Press **CANCEL** (except during disk access) to cancel the operation.

## Disk Delete



EXIT COPY DELETE RENAME DISK COPY **DISK DELETE**

This function allows you to delete all files contained on a disk at one time.

1. Press **MENU** to display the function menu.
2. Select DISK DELETE and press **RETURN**. The following message appears:

Delete all files on this disk? Press RETURN (yes) or CANCEL(no).

### WARNING

**When you perform a DISK DELETE, all the files on the disk are deleted and cannot be restored. Make sure there are no files you want to save on the disk before pressing **RETURN**. You are not able to delete the files from the disk that is shipped with your machine. That disk contains specialized files in addition to any data files that you may have stored.**

Short cut: Instead of steps 1 and 2, press **CODE** + **L**.

3. Press **RETURN**. All the files on the disk are deleted and the message disappears.

## CHAPTER 8

# Troubleshooting and Error Messages

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Troubleshooting.....166

Error Messages .....167

# Troubleshooting

This machine has been designed and manufactured to give you years of trouble-free use. In the rare case that trouble does occur, you will probably be able to find the solution in the table below. If you cannot, do not attempt to repair the machine yourself. Instead, please contact your dealer.

Problem	Remedy
Nothing works after the machine has been switched on.	Check that the power cord is plugged in. Check that the top cover is firmly closed.
Printing is impossible or printout is difficult to read.	Check that the cassette daisy wheel is inserted correctly. Check that the cassette ribbon is positioned correctly. Check that the installed daisy wheel matches the selected Keyboard setting.
In Typewriter mode, you cannot make corrections on paper.	Check to see if the correction tape has run out. Replace if necessary. Check that the correction tape is installed properly. Check that the correction tape you have purchased corresponds to the cassette ribbon you are using.
Printed characters do not match those displayed on the screen.	Check that the installed daisy wheel matches the selected Keyboard setting. Check that the PAUSE FOR KEYBOARD CHANGE is set to NO on the PRINT MENU screen.
Reading or writing to the disk is not possible.	Check the type of disk. Make sure that it is a double density disk (either single-sided or double-sided). Check that the machine is not too close to a television set. The disk may be damaged. Try another disk.



# Error Messages

Consult the following table when an error message appears.

Message	Cause	Remedy
Memory full.	You attempted an operation that requires more memory than is currently available.	Delete part of the text and try the operation again. Save the file on disk and start with a new file.
Unidentified disk error. Insert another and press RETURN.	Defective disk.	Try another disk or reformat the disk. If the same message appears, consult your dealer.
	You have attempted to delete a spreadsheet template file.	You are not able to delete template files.
	You attempted to copy files from an unformatted disk.	Be sure the disk from which you are copying has been formatted for this machine.
Insert disk and press RETURN.	The inserted disk is not a double density disk.	Use a double density disk (single-sided or double-sided).
	The disk was removed during a read operation (the disk drive access light was on).	Re-insert the disk and press <b>RETURN</b> . Avoid removing or inserting a disk while the operation indicator is lit, as this can destroy your data.
Incorrect disk. Insert another and press RETURN.	The selected file cannot be found on the inserted disk (you changed the disk so that the WP INDEX screen and the inserted disk do not match).	Press <b>CANCEL</b> or insert the correct disk and press <b>RETURN</b> .
Disk is write-protected. Insert another and press RETURN.	You are using a write-protected disk.	Try another disk or switch the write-protection switch on the disk to the "Read-Write" position.
Check printer.	Malfunction of the printer mechanism.	Consult your dealer.
Check disk.	Malfunction of the disk drive.	Consult your dealer.
Rom down.	Malfunction detected in the machine's Read Only Memory.	Consult your dealer immediately.
Ram down.	Malfunction detected in the machine's Random Access Memory.	Consult your dealer immediately.
Cover open.	The top cover is open.	Close the top cover firmly.

## APPENDIX A. Specifications

General	
Voltage	110 – 120V
Weight	24.2 lbs (11 kg)
Dimensions	16" (W) x 17" (D) x 7.7" (H) 405 mm (W) x 450 mm (D) x 195 mm (H)
Display	CRT, 15 lines x 91 columns
Keyboard	46 keys Auto repeat function 3 selectable character sets
Floppy Disk Drive	Built-in, 3.5 inch micro floppy disk (double density, 1DD or 2DD)
Printer	Built-in daisy wheel printer
Daisy wheel	Cassette (96 characters)
Paper capacity	12" (304.8 mm)
Typing capacity	9" (228.6 mm)
Copy capacity	Original + 4 copies
Typing speed	13 characters/second
Character pitches	10, 12, 15 (90, 108, 135 characters/line max.)
Line spacing	1.0, 1.5, 2.0
Printing direction	Bi-directional
Ribbons	Correction film (approx. 50,000 characters) Nylon (approx. 500,000 characters) Multi-strike ribbon (approx. 150,000 characters)
Correction tapes	Lift off & cover-up (up to 1,400 characters)
Memory	
Correction memory	One line
Internal memory	64K bytes

# APPENDIX B. Character Keys

This appendix shows how to use the three keyboard settings to produce various characters. Remember that to display characters from the International or Symbol keyboards, you must change the Keyboard setting to II or III, respectively. To print characters from the International or Symbol keyboards, you must change to the appropriate daisy wheel.

## Standard (I) and International (II) Keyboard

Characters available from the Standard and International keyboard settings are indicated on the keytops as follows:

° = ± [ ]	! 1	@ " 2	# / 3	\$ 4	% £ 5	¢ - 6	& 7	* ' 8	( 9	) 0	- % +	=
	Q	W	E	R	T	Y	U	I	O	P	¼	½
	A	S	D	F	G	H	J	K	L	:	ˆ	ˆ
	Z	X	C	V	B	N	M	,	?	.	?	:
	ß	²	¥	³	¢			,	.	/	;	



Keys with a single character (standard or international):  
 Unshifted small letter  
 Shifted capital letter

Standard	International
° =	Shifted
± ^	
	Unshifted

Keys with more than one black character:  
 Standard left character  
 International right character  
 Unshifted lowercase  
 Shifted uppercase

Standard	International
Z	
ß	ß

Keys with green character or function:  
 Standard left character  
 International right character  
 CODE + the key green character or function

\* In the above illustration, dead key characters are indicated with a small box.

# Symbol (III) Keyboard

Characters available from the Symbol keyboard are not marked on the keytops. Refer to the keyboard illustration below. In this illustration, the characters are indicated as follows:

	$\pm$	$\times$	$\div$	$\cdot$	$-$	$\neq$	$\leq$	$\geq$	$\int$	$\sqrt{\phantom{x}}$		
$\frac{1}{2}$	1	2	3	4	5	6	7	8	9	0		
$\Gamma$	$\Delta$	$\leftarrow$	$\Theta$	$\rightarrow$	$\Upsilon$	$\Xi$	$\uparrow$	$\downarrow$	$\rho$	$\Pi$	$\{$	$\}$
$\gamma$	$\delta$	$\epsilon$	$\theta$	$\tau$	$\upsilon$	$\xi$	1	o				
$\nabla$	$\Sigma$	$\Phi$	$<$	$\wedge$	$\eta$	$>$	$\S$	$\Omega$				
$\alpha$	$\sigma$	$\phi$	$\triangleleft$	$\lambda$	$\eta$	$+$	$\kappa$	$\omega$	$\lceil$	$\rfloor$		
$\approx$	$\equiv$	$\Psi$	$\propto$	$\infty$	$\sim$	$\partial$	$\mu$	$\text{I}$	$-$	$\approx$		
$\zeta$	$\chi$	$\psi$	$\dots$	$\beta$	$\nu$							

- |

Keys with a single character (same character when shifted or unshifted)
- 1,  $\pm$

Keys with two characters:  
Unshifted                      lower case  
Shifted                         upper case
- $\delta$ ,  $\Delta$ ,  $\odot$

Keys with a third character:  
Unshifted                      lower case  
Shifted                         upper case  
 + the key      third character

\* In the above illustration, dead key characters are indicated with a small box.

\* To compose large mathematical symbols, use two dead characters and as the base character.

Examples:  $\Sigma$  (sum),  $\int$  (integral)

## APPENDIX C. Screen Symbols and Indicators

### Screen Symbols

The following lists describe the symbols that appear on the screen. There are two kinds of screen symbols:

- Symbols displayed on the scale
- Symbols displayed in the text

#### Symbols Displayed on the Scale

Symbol	Meaning	Page
L	Position of the left margin	49
R	Position of the right margin	49
T	Position of a tab stop	64
D	Position of a decimal tab stop	64
H	Beginning of the hot zone	50
0, 1, 2,...	Absolute position from the left edge of the paper	49
¶	Position of a tab (Framing mode)	158

#### Symbols Displayed in the Text

The following symbols are displayed in the text in Word Processing mode, unless otherwise specified.

Symbol	Meaning	Page
✎	ADD CURSOR — indicates that the cursor can be used to add lines on the Framing screen	157
⌋	CENTERING BETWEEN MARGINS — displayed immediately to the left of centered text	68
⌋	CENTERING BETWEEN TABS — displayed immediately to the left of centered text	68
✎	DELETE CURSOR — indicates that the cursor can be used to delete lines on the Framing screen	157
¶	FORMAT CHANGE — displayed in the dead column, before the first line of a reformatted paragraph	63
⌋	INDENT CLEAR — displayed at the end of an indented paragraph when <b>CODE</b> + <b>IND CLR</b> is pressed	67
⌋	LINE FEED — displayed at the end of a paragraph when <b>RETURN</b> is pressed	52
¶	MOVE CURSOR — indicates that the cursor can be moved across the Framing screen without drawing lines	157

Symbol	Meaning	Page
↓	PAGE BREAK — displayed at the end of a paragraph when <b>CODE</b> + <b>PBREAK</b> is pressed, and starts a new page	71
→	PARAGRAPH INDENT — displayed to the left of a tab stop when the cursor has been moved with <b>CODE</b> + <b>PIND</b>	66
←	PERMANENT BACKSPACE — displayed between the base character and the superimposed character when <b>CODE</b> + <b>BACKSPACE</b> is pressed in Typewriter mode (In L/L mode, or when using Centering, Right Margin Flush, or Decimal Tab)	41
⋮	PERMANENT SPACE — displayed at the cursor position when <b>CODE</b> + <b>SPACE BAR</b> is pressed	50
↔	RIGHT MARGIN FLUSH — displayed immediately to the left of text that has been aligned with the right margin	67
§	STOP SYMBOL — displayed at the cursor position when <b>CODE</b> + <b>SCODE</b> is pressed	103
→	TAB — displayed at the left of a tab stop when the cursor has been moved with <b>TAB</b>	65

## Status Line Indicators

The following list describes the indicators that appear on the Status Line. Unless specified, the indicators have the same meaning regardless of the screen on which they appear. If an indicator appears in only one mode, that mode appears in parentheses. The "Xs" represent values that vary according to the current settings.

Indicator	Meaning	Page
AUT	Auto Return function is activated (Typewriter mode)	25
BLD	Bold function is activated	39, 78
CAPS	Keyboard is in Caps Lock mode	27
COL:XXX	Number of the current column	49
CNT	Continuous Underline function is activated	39, 79
CTR	Centering function is activated (Typewriter mode)	36
DEAD:XX	Displays the dead character when the cursor is on the base character (Word Processing mode)	82
DTAB	Decimal tab function is activated (Typewriter mode)	34
EXP	Expand function is activated	40, 80
INS	Insert mode is activated	31, 54
JST	Justify function is activated	26, 70
KB:XX	Current keyboard selection (I, II, or III)	38, 81
L:XXX	Number of the current line	71
L.SP:X.X	Current line spacing (1.0, 1.5, or 2.0)	30, 69

Indicator	Meaning	Page
M.C	Manual correction function is activated (Typewriter mode)	33
P:XX	Number of the current page	71
P BS:X	Displays the superimposed character when the cursor is on the base character (Word Processing mode)	82
P IND	Paragraph indent function is activated (Typewriter mode)	35
PITCH:XX	Current pitch (10, 12, or 15)	29, 82
REMAIN	In Typewriter mode — indicates the number of characters that can be typed before the right margin is reached	25
	On other screens — indicates, in kilobytes, the remaining amount of free space for the file or on the disk	48
RMF	Right Margin Flush function is activated (Typewriter mode)	37
SHIFT	Keyboard is in uppercase mode	27
TOTAL WORDS:XX	Indicates the total number of words in the user dictionary.	89
GR	Spell Checker or Punctuation Alert are activated	42, 87
WRD	Word Underline function is activated	39, 79
XXXXXXXX	Name of the current file (displayed in the upper-left corner)	49

# APPENDIX D. Function and Function Menu Quick Reference

## Functions

The following table lists, in alphabetical order, the functions associated with all modes of this machine. The list includes the function key or short cut key you can use to perform each function, the menu (and submenu) from which you can also select the function, and the page in this manual where you can find more information.

For functions you can select from a menu, see also "Function Menus," page 178.

Function	Key or Short Cut	Screen	Function Menu	Page
ALL DELETE (files)*	+			
ALL DELETE (lines)	+	Framing		159
ALL DELETE (words)		User Dictionary		90
BACKSPACE*				
BACKSPACE 1	+	Typewriter		28
BOLD	+	Spreadsheet		145
		Typewriter	STYLE	38
		WP Input/Edit	STYLE	78
CANCEL*				
CAPS	+			27, 47
CENTERING	+	Typewriter	CTR/RMF	36
		WP Input/Edit	CTR/RMF	68
CENTERING (^ format mark)	+	Spreadsheet		120
CHANGE SCREEN	+	WP Input/Edit	FORM	77
CLEAR		Spreadsheet		137
CONVERT	+	Spreadsheet Index		149
COPY (block)	+	WP Input/Edit	BLOCK	56
COPY (cells)	+	Spreadsheet		133
COPY (file)*	+			
CORRECTION*				
CURRENCY		Spreadsheet	FORMAT	123
CURSOR KEYS*	, , ,			
DECIMAL TAB SET	+	Typewriter		34
		WP Input/Edit		64
DELETE (block)	+	WP Input/Edit	BLOCK	56
DELETE (file)*	+			
DELETE (row/column)	+	Spreadsheet		138
DELETE (word)	+	User Dictionary		90
DEMONSTRATION	+	Main Menu		2
DISK APPLICATION		Main Menu		115
DISK COPY*	+			
DISK DELETE	+	Disk Utility		164

\* These functions can be performed from screens in several modes and are described in many places in this manual.



Function	Key or Short Cut	Screen	Function Menu	Page
DUAL SCREEN		WP Input/Edit	FORM	76
EDIT THESAURUS		Typewriter	GRAMMAR	96
		WP Input/Edit	GRAMMAR2	
EXIT (mode)*	<b>CANCEL</b>			
EXIT (Spreadsheet)	<b>TW/WP</b>	Spreadsheet Index		116
EXIT (User Dictionary)	<b>CANCEL</b> , <b>FILE</b>	User Dictionary		90
EXPAND		Typewriter	STYLE	40
		WP Input/Edit	STYLE	79
EXPRESS BACKSPACE	<b>CODE</b> + <b>EXPR</b>			28, 52
FILE*	<b>FILE</b>			
FILL		Spreadsheet	COLUMN	136
FIXED		Spreadsheet	FORMAT	122
FOOTER		WP Input/Edit	FORM	73
FREEZE		Spreadsheet	COLUMN	141
GO TO (page)*	<b>CODE</b> + <b>GOTO</b>			
GRAMMAR CHECK	<b>CODE</b> + <b>GRAM</b>	Typewriter	GRAMMAR	42
		WP Input/Edit	GRAMMAR1	84
GRAMMAR CHECK SET MENU		WP Input/Edit	GRAMMAR1	84
HEADER		WP Input/Edit	FORM	73
HELP*	<b>CODE</b> + <b>H</b>			
HYPHEN				26, 70
INDENT CLEAR	<b>CODE</b> + <b>IND CLR</b>	Typewriter		35
		WP Input/Edit		67
INSERT*	<b>CODE</b> + <b>INSERT</b>			
INSERT (row/column)	<b>CODE</b> + <b>INSERT</b>	Spreadsheet		139
JUSTIFY	<b>CODE</b> + <b>OPERATE</b>	Typewriter		26
		WP Input/Edit		70
KEYBOARD*	<b>CODE</b> + <b>KB</b>			
LAYOUT (display)	<b>CODE</b> + <b>LAYOUT</b>			75
LEFT MARGIN	<b>CODE</b> + <b>L MAR</b>			63
LINE INDENT	<b>CODE</b> + <b>L IND</b>			35, 66
LINE OUT*	<b>CODE</b> + <b>LINE OUT</b>			
LINE SPACING	<b>CODE</b> + <b>LINE</b>			30, 69
LOAD (file)*	<b>RETURN</b>			
MANUAL CORRECTION	<b>CODE</b> + <b>CORRECT</b>	Typewriter		31
MARGIN RELEASE	<b>CODE</b> + <b>M REL</b>			29
MENU*	<b>MENU</b>			
MOVE	<b>CODE</b> + <b>E</b>	WP Input/Edit	BLOCK	57
MOVE (cells)	<b>CODE</b> + <b>E</b>	Spreadsheet		135
NEXT SCREEN*	<b>CODE</b> + <b>NEXTS</b>			
NO DISPLAY		Spreadsheet	FORMAT	123

Function	Key or Short Cut	Screen	Function Menu	Page
OPERATE	<b>CODE</b> + <b>OPERATE</b>	Typewriter		25
PAGE BREAK	<b>CODE</b> + <b>P.BREAK</b>			71
PAGE PRINT	<b>CODE</b> + <b>PRINT</b>	WP Input/Edit	PAGE PRINT	99
PAPER DOWN	<b>CODE</b> + <b>P.DOWN</b>			12, 80
PAPER INSERT	<b>P.INS</b>			12
PAPER SIZE		WP Input/Edit	FORM	72
PAPER UP	<b>CODE</b> + <b>P.UP</b>			12, 80
PARAGRAPH INDENT	<b>CODE</b> + <b>P.IND</b>	Typewriter		35
		WP Input/Edit		66
PERCENT		Spreadsheet	FORMAT	123
PERMANENT BACKSPACE	<b>CODE</b> + <b>BACKSPACE</b>			41
PERMANENT HYPHEN	<b>CODE</b> + <b>[-]</b>			70
PERMANENT SPACE	<b>CODE</b> + <b>[SPACEBAR]</b>			50
PITCH*	<b>CODE</b> + <b>PITCH</b>			
PREVIOUS SCREEN*	<b>CODE</b> + <b>PRE.S</b>			
PRINT (file)*	<b>CODE</b> + <b>PRINT</b>			
PRINT (frame)	<b>CODE</b> + <b>PRINT</b>	Framing Edit		160
PRINT (page)	<b>CODE</b> + <b>PRINT</b>	WP Input/Edit		99
RECALC		Spreadsheet		128
RELEASE		Spreadsheet	COLUMN	142
RELOCATION	<b>CODE</b> + <b>RELOC</b>			32, 52
RENAME (file)*	<b>CODE</b> + <b>R</b>			
REPLACE		WP Input/Edit	SEARCH	61
RETURN*	<b>RETURN</b>			
RIGHT MARGIN	<b>CODE</b> + <b>R.MAR</b>			25, 63
RIGHT MARGIN FLUSH	<b>CODE</b> + <b>[F]</b>	Spreadsheet		120
		Typewriter	CTR/RMF	37
		WP Input/Edit	CTR/RMF	67
SAVE (file)*	<b>FILE</b>			
SCALE LINE ON/OFF		WP Input/Edit	FORM	74
SEARCH		WP Input/Edit	SEARCH	60
SELECT		Spreadsheet	SORT	144
SHIFT	<b>SHIFT</b>			27, 47
SHIFT LOCK	<b>SHIFT LOCK</b>			27, 47
SORT		Spreadsheet	SORT	142
SORT & SELECT		Spreadsheet	SORT	144
SPACE*	<b>[SPACEBAR]</b>			
STOP CODE	<b>CODE</b> + <b>S.CODE</b>			103
TAB	<b>TAB</b>			34, 65
TAB CLEAR	<b>CODE</b> + <b>TCLR</b>			34, 65
TAB SET	<b>CODE</b> + <b>TSET</b>			34, 64

Function	Key or Short Cut	Screen	Function Menu	Page
TEMPORARY FILE	+	WP Input/Edit	BLOCK	58
TUTORIAL	+	Main Menu		2
TYPE THESAURUS		Typewriter	GRAMMAR	97
		WP Input/Edit	GRAMMAR2	
TYPEWRITER/WORD PROCESSOR				24, 48
UNDERLINE	+	Spreadsheet		146
		Typewriter	STYLE	39
		WP Input/Edit	STYLE	79
USER DICTIONARY MAINTENANCE		Typewriter	GRAMMAR	89
		WP Input/Edit	GRAMMAR1	
USER DICTIONARY LOAD		Typewriter	GRAMMAR	90
		WP Input/Edit	GRAMMAR1	
USER DICTIONARY SAVE		Typewriter	GRAMMAR	88
		WP Input/Edit	GRAMMAR1	
WIDTH		Spreadsheet	COLUMN	141
WORD COUNT		WP Input/Edit	GRAMMAR2	95
WORD OUT*				

## Function Menus

The following table lists the functions available from function menus and sub-menus in all modes. The characters printed in bold are the acceleration characters.

### Typewriter Screen

Menu Item	Submenu	Short Cut	Page
STYLE	<b>BOLD</b>	<b>CODE</b> + <b>B</b>	38
	<b>UNDERLINE</b>	<b>CODE</b> + <b>N</b>	39
	<b>EXPAND</b>		40
CTR/RMF	<b>CENTERING</b>	<b>CODE</b> + <b>F</b>	36
	<b>RIGHT MARGIN FLUSH</b>	<b>CODE</b> + <b>R</b>	37
GRAMMAR	<b>GRAMMAR CHECK</b>	<b>CODE</b> + <b>GRAM</b>	42
	<b>USER DICTIONARY MAINTENANCE</b>		89
	<b>USER DICTIONARY LOAD</b>		90
	<b>USER DICTIONARY SAVE</b>		88
	<b>EDIT THESAURUS</b>		96
	<b>TYPE THESAURUS</b>		97

### WP Input/Edit Screen

Menu Item	Submenu	Short Cut	Page
STYLE	<b>BOLD</b>	<b>CODE</b> + <b>B</b>	78
	<b>UNDERLINE</b>	<b>CODE</b> + <b>N</b>	79
	<b>EXPAND</b>		79
BLOCK	<b>COPY</b>	<b>CODE</b> + <b>C</b>	55
	<b>DELETE</b>	<b>CODE</b> + <b>D</b>	56
	<b>MOVE</b>	<b>CODE</b> + <b>E</b>	57
CTR/RMF	<b>CENTERING</b>	<b>CODE</b> + <b>F</b>	68
	<b>RIGHT MARGIN FLUSH</b>	<b>CODE</b> + <b>R</b>	67
GRAMMAR1	<b>GRAMMAR CHECK</b>	<b>CODE</b> + <b>GRAM</b>	84
	<b>GRAMMAR CHECK SET MENU</b>		84
	<b>USER DICTIONARY MAINTENANCE</b>		89
	<b>USER DICTIONARY LOAD</b>		90
	<b>USER DICTIONARY SAVE</b>		88
GRAMMAR2	<b>WORD COUNT</b>		95
	<b>EDIT THESAURUS</b>		96
	<b>TYPE THESAURUS</b>		97
SEARCH	<b>SEARCH</b>		60
	<b>REPLACE</b>		61
FORM	<b>PAPER SIZE</b>		72
	<b>HEADER</b>		73
	<b>FOOTER</b>		73
	<b>SCALE LINE ON/OFF</b>		74
	<b>DUAL SCREEN</b>		76
PAGE PRINT	<b>CHANGE SCREEN</b>	<b>CODE</b> + <b>Q</b>	77
		<b>CODE</b> + <b>PRINT</b>	99

## WP Index/Framing Index Screen

Menu Item	Short Cut	Page
EXIT	<b>CANCEL</b>	51
COPY	<b>CODE</b> + <b>C</b>	108
DELETE	<b>CODE</b> + <b>D</b>	109
RENAME	<b>CODE</b> + <b>R</b>	109
DISK COPY	<b>CODE</b> + <b>O</b>	110
ALL DELETE	<b>CODE</b> + <b>L</b>	111
PRINT	<b>CODE</b> + <b>PRINT</b>	99

## User Dictionary Screen

Menu Item	Short Cut	Page
EXIT	<b>FILE</b> or <b>CANCEL</b>	90
DELETE	<b>CODE</b> + <b>D</b>	90
ALL DELETE		90
LOAD		90
SAVE		90

## Spreadsheet Input/Edit Screen

Menu Item	Submenu	Short Cut	Page
COLUMN	WIDTH		141
	FILL		136
	FREEZE		141
	RELEASE		142
FORMAT	FIXED		122
	CURRENCY		123
	PERCENT		123
	NO DISPLAY		124
RECALC			128
SORT	SORT		142
	SELECT		144
	SORT & SELECT		145
CLEAR			137
CONVERT			149

## Spreadsheet Index Screen

Menu Item	Short Cut	Page
EXIT		119
COPY	+	148
DELETE	+	148
RENAME	+	149
CONVERT	+	150
ALL DELETE	+	151
PRINT	+	152

## Framing Screen

Menu Item	Short Cut	Page
PRINT	+	160
ALL DELETE	+	159

## Disk Utility Screen

Menu Item	Short Cut	Page
EXIT		163
COPY	+	163
DELETE	+	163
RENAME	+	163
DISK COPY	+	163
DISK DELETE	+	164

## APPENDIX

Pica (1/10") Pitch

Elite (1/12") Pitch

**Micron (1/15") Pitch**

Pica (1/10") Pitch

[illegible]

181

## Compatible Accessories

Obtain the following Compatible Accessories from your nearest authorized dealer. Brother cannot be responsible for difficulties caused by the use of unauthorized supplies.

### Starter kit

Item No.	Item
SK-100	3 Correctable Film Ribbons 1 Script 1012 Daisy Wheel 1 Lift-off Correction Tape
SK-150	3 Correctable Film Ribbons 2 3.5" Floppy Disks 2 Lift-off Correction Tapes

### Cassette ribbons/correction tapes

Item No.	Item
1030	Correctable Film Ribbon
1230	Correctable Film Ribbon (2 pack)
1032	Nylon Ribbon
1031W	Multi-strike Ribbon
3010	Lift-Off Correction Tape (2pcs.)
4010	Cover up Correction Tape (2pcs.)

### Cassette daisy wheels

Item No.	Item	Type Pitch
M401	Pica 10 (Standard Pica)	10
M402	Prestige 1012	10, 12
M403	Elite 12 (Standard Elite)	12
M405	Script 1012	10, 12
M408	Grande 10	10
M409	Quadro 1012	10, 12
M410	Quadro 15	15
M411	Brougham 10	10
M412	Brougham 12	12
M413	Brougham 15	15
M414	Prestige Italic 1012	10, 12
M415	OCR-B 10	10
M416	OCR-A 10	10
M417	Letter Gothic 12	12
M461	Brougham 10 (International)	10
M452	Prestige 1012 (International)	10, 12
M460	Quadro 15 (International)	15

### Floppy disks

Item No.	Item
BL-2	Business Letter Template Disk
MFD-60	A Box of Ten 3.5" 2DD Floppy Disks
THR-2	Thesaurus Disk



# GLOSSARY

---

**Absolute address**

A spreadsheet cell address specified in a formula that is not updated if you change the layout of your spreadsheet.

**Address**

The position of a spreadsheet cell, designated by its row and column number.

**Alphanumeric data**

Data entered into a spreadsheet that cannot be calculated.

**Argument**

The information you must supply when using a Spreadsheet function.

**Backup**

A copy of all the data on a disk that you keep in case your original data is damaged.

**Block**

A continuous section of text that you can copy, delete, or move to another part of a document.

**Bold**

Characters that are thicker than normal characters.

**Cell**

On a spreadsheet, the intersection of a row and a column, and where one piece of data is stored.

**Column**

In Spreadsheet mode, a vertical area on the grid which is one cell wide.

**Conversion**

Changing computer data into a form that can be used by a different computer system or program. This machine allows you to convert a Spreadsheet file or part of a spreadsheet into a Word Processing file.

**Correction memory**

In Typewriter mode, a small portion of memory that temporarily stores the text on the current line so that the line can be corrected.

**Cursor**

- 1) A blinking box used to select a position on the screen;
- 2) a block-shaped illuminated area used to select menu items by highlighting the item in reverse image.

**Daisy wheel**

A removable plastic wheel with spokes extending out from the center that is used for printing on this machine.

**Dead key**

A key that produces a character but does not move the cursor or carriage one position to the right. Dead keys are usually used to type the accent marks used in such languages as French, German and Spanish.

**Decimal tab**

A special tab used to align a column of numbers by their decimal point rather than by the first character.

**Direct number**

Spreadsheet data, consisting of digits and possibly a decimal point, that can be used in calculations.

**Disk drive**

The mechanism which writes data to and reads data from the disk.

**Double Columns Printing**

In Word Processing, printing two columns of text on a single page.

**Dual Screen**

A Word Processing function that allows you to display and edit two documents at the same time.

**Elite**

One of the pitches available on this machine. Elite pitch corresponds to 12 characters per inch.

**Expand**

A Word Processing and Typewriter function that changes the appearance of text by inserting a space after each character.

**Express Backspace**

A Typewriter and Word Processing function that moves the carriage or cursor quickly to the left margin.

**Extension**

Characters added to the end of a file name to identify in which mode the file was created.

**File**

The unit in which data is stored on the disk, for example, a single Word Processing document, or spreadsheet.

**Floppy disk**

A thin, flexible magnetic-coated disk on which computer data can be stored. This machine uses 3.5-inch floppy disks, which are contained in a hard plastic cover.

**Footer**

A line of text printed at the bottom of each page.

**Format**

The visual arrangement of text on the page, determined by such factors as margin and tab settings, justification, centering, etc.

**Format mark**

Characters that designate spreadsheet data as alphanumeric, and can also be used to place data flush right or flush left in the cell.

**Formatting**

A process by which the system divides a new disk into sections that organize the storage of your files.

**Formula**

Numeric data entered on a spreadsheet consisting of operators, operands, and parentheses, if necessary, that directs the system to perform a calculation.

**Fractional Backspace**

A Typewriter function that moves the carriage backwards by 1/60th of an inch.

**Frame**

A set of horizontal and/or vertical lines such as those used in forms and tables.

**Freeze**

Keeping the first column(s) of a spreadsheet on the screen while displaying the rightmost columns.

**Function**

Formulas "built-in" to the Spreadsheet mode that allow you to perform common calculations and other tasks without entering long formulas yourself.

**Header**

A line of text printed at the top of each page.

**Help Menu**

Screen that appears when you press **CODE** + **HELP** (**H**) that displays a list of "short cut" functions you can perform by pressing **CODE** plus a character key.

**Hot Zone**

The area consisting of six character positions before the right margin within which each line must end.

**Index**

A list of all the files on a disk. On this machine, you can also display an index of files created in a specific mode.

**Initialize**

To delete all data from a disk for formatting.

**Insert Mode**

The mode in which you can insert text at the current cursor position without deleting other text.

**Integer**

A whole number (no fractional value).

**International Keyboard (Keyboard II)**

The Keyboard setting that offers accents required by such languages as French, Spanish and German.

**Justification**

Text aligned with both the left and right margins. The machine justifies text by adding extra space between words.

**Label**

The word or other set of characters that identifies each category of information in a Spreadsheet.

**Line-by-Line (L/L) Mode**

An option in Typewriter mode in which the current line of text is displayed on the screen before it is printed.

**Line Indent**

The function that inserts five blank spaces at the beginning of a line, usually used to mark the beginning of a paragraph.

**Line Out**

The Word Processing or Typewriter function that quickly erases all characters before the cursor or carriage on the current line.

**Memory**

A part of the machine which temporarily stores the data you enter. The contents of the memory is cleared when you turn off the machine.

## **Menu**

A list of functions you can select by positioning the cursor at the desired function and pressing **RETURN**.

## **Micron**

One of the pitches available on this machine. Micron pitch corresponds to 15 characters per inch.

## **Operand**

The data in a spreadsheet formula on which a mathematical operation will be performed. In a spreadsheet formula, an operand can be a number, address, function, or formula enclosed in parentheses.

## **Operator**

The character in a spreadsheet formula that specifies the mathematical operation to be performed (+, -, #, \*, and /).

## **Overwrite Mode**

The mode in which inserting text at the current cursor position deletes the existing text at that position.

## **Page Layout View**

A Word Processing function that allows you to check the layout of your document by displaying three full pages on the screen in reduced form.

## **Paragraph Indent**

A Typewriter and Word Processing function that allows you to temporarily reset the left margin at a tab position, so that the entire paragraph is indented to that position.

## **Permanent Hyphen**

A hyphen entered with the **CODE** key plus a hyphen for words that always require a hyphen.

## **Pica**

One of the pitches available on this machine. Pica pitch corresponds to 10 characters per inch.

## **Pitch**

The number of characters you can type per inch, based on the Pitch setting and the daisy wheel you are using. Pica, Elite and Micron pitches are available on this machine if you have the corresponding daisy wheel.

## **Platen**

The rubber roller on which the paper moves up and down.

## **Punctuation Alert**

A Word Processing function that checks your document for common punctuation errors.

## **Range**

In Spreadsheet mode, a continuous rectangular area of cells, which you can specify by providing the addresses of two opposite corners.

## **Recalculation**

Redetermining the results of all formulas in a spreadsheet to incorporate new or changed data.

## **Redundancy Check**

A function of the Spell Checker that detects repeated words.

**Relative Address**

A spreadsheet cell address in a formula that is updated if you change the layout of your spreadsheet.

**Release**

Freeing "frozen" columns in a spreadsheet so that the data can be edited.

**Reverse Image**

A way of highlighting text by reversing the screen image so that the text appears dark and the area surrounding it appears light.

**Right Margin Flush**

Aligning a line of text with the right margin.

**Row**

On a spreadsheet, a horizontal grouping of information which is one cell high.

**Scale**

The line at the top of the display that shows the horizontal position of the cursor as well as the position of the right and left margins, hot zone, and tab settings.

**Scroll**

When all the data cannot fit on the screen, changes the displayed data such that as old data disappears at one edge, new data appears at the opposite edge.

**Select**

To print the data in a spreadsheet that meets certain criteria.

**Short Cut**

Procedure for performing a function which requires less keystrokes than selecting the function from a menu.

**Soft Hyphen**

A hyphen typed to hyphenate a word in the hot zone that disappears if subsequent revisions or reformatting moves the word out of the hot zone.

**Sort**

To reorganize spreadsheet data in either alphabetic or numeric order (or reverse order).

**Spell Checker**

A Word Processing and Typewriter function that checks your text for misspelled words and displays a list of possible corrections.

**Status Line**

The area at the top of the screen showing the name of the file you are working on, the current page, line, and column number of the cursor, number of characters remaining on the line, and current settings such as Keyboard, Pitch, and Line Spacing.

**Stop Symbol**

A symbol you can insert in your document to automatically interrupt printing.

**Submenu**

A menu that "drops down" from a function menu to display a list of additional options related to your function menu choice.

**Subscript**

A character printed slightly lower than normal characters.

**Superscript**

A character printed slightly higher than normal characters.

### **Superimposed characters**

A character formed from typing one character on top of another.

### **Symbol Keyboard (Keyboard III)**

The Keyboard setting that offers mathematical symbols and Greek characters.

### **Template**

A skeleton spreadsheet that you can start with rather than creating a spreadsheet from scratch. The template includes the standard labels and formulas for a specific purpose.

### **Thesaurus**

A Word Processing and Typewriter function that displays synonyms of a specified word.

### **Top cover**

The clear plastic cover that protects the inside of the machine and decreases printer noise.

### **TYPE Mode**

An option in Typewriter mode in which the characters you type are printed immediately rather than being displayed on the screen.

### **User Dictionary**

A list of words that are not in the Spell Checker's standard dictionary, which the Spell Checker consults when checking spelling in your document.

### **Word Count**

A Word Processing function that counts the occurrences of all words in the document, so that you can detect words that are used too frequently.

### **Word Out**

A Word Processing or Typewriter function that allows you to quickly delete the word at the current cursor or carriage position.

### **Word Wrap**

The Word Processing or Typewriter function that automatically breaks a line and continues the text on the next line.

### **Write protection**

Protecting a disk from accidental erasure by setting the write-protection switch in Read Only position.

## A

Absolute Address, 133  
 Accents, 41, 81  
 Accessories, 13-16, 193  
 Addition, 124  
 Address, cell, 133  
 Adjusting column width, 140  
 Alphanumeric data, 120  
 Argument, 130-132  
 Automatic Return, 24, 47, 50  
 Automatic Saving, 107

## B

Backing up a disk, 19, 163  
 Backspace key, 28, 50  
 Blank row, inserting, 139  
 Blank column, inserting, 139  
 Block (Word Processing), 55-57  
     Copying within a file, 55  
     Copying between files, 58  
     Deleting, 56  
     Moving, 57  
 Bold  
     Spreadsheet, 145  
     Typewriter, 38  
     Word Processing, 78  
 Bottom Margin, 72  
 Brightness Controller, 11  
 Business Letter Template, 2

## C

Calculation  
     Spreadsheet, 127, 128  
 Capital letters, 27, 47  
 CAPS LOCK key, 27, 47  
 Carriage, 26, 27, 32  
 Cassette daisy wheel, 15, 102, 156, 168  
 Cassette ribbon, 13  
 Cells, 113, 129, 133  
 Cell address, 133  
 Centering  
     Spreadsheet, 120  
     Typewriter, 36  
     Word Processing, 67  
 Changing correction tapes, 14, 166  
 Changing daisy wheels, 15  
 Changing ribbons, 13

Character keys, 7  
 Cleaning, 4  
 Clearing a range of cells, 137  
 CODE key, Preface, 8, 47  
 Column  
     Spreadsheet, 113, 138-142  
 Converting  
     a Spreadsheet file, 149  
     a Spreadsheet range, 150  
 Copying a block, 55, 58  
 Copying a disk, 163  
 Copying a file, 108, 148  
 Copying a range, 134  
 Copying one cell to a range, 133  
 Corrections  
     Typewriter, 31-33  
     Word Processing, 52-62  
 Correction tape, 14, 166  
 Counting Cells, 166  
 Cursor, 50, 157  
 Cursor, moving the  
     Framing, 158  
     Spreadsheet, 118  
     Typewriter, 27, 31  
     Word Processing, 52, 54

## D

Daisy wheel, 15, 100, 102, 153, 166  
 Daisy wheel samples, 181  
 Data, spreadsheet, 120-124  
 Dead keys  
     Typewriter, 34  
     Word Processing 81  
 Decimal tabs, 34, 64  
 Deleting  
     a block, 56  
     a column, 138  
     a file, 109, 148  
     all files on a disk, 164  
     a row, 137  
     frame lines, 159  
     text, 31, 55  
 Demonstration, 2  
 Disk Delete, 164  
 Disk drive, 17  
 Disks, 17-19, 166  
 Disk Utilities, 162-164  
 Division, 124  
 Dollar sign, 123

Double columns printing, 102, 103  
 Drawing a line, 158  
 Dual Screen Display, 76

## E

Edit Thesaurus, 96  
 Editing text  
     Typewriter, 31-33  
     Word Processor, 52-62  
 Elite, 29, 71  
 Ending a page, 71  
 Ending a paragraph, 35  
 Entering text, 50  
 Erasing, 31, 32  
 Error messages, 167  
 Expand  
     Typewriter, 40  
     Word Processor, 79  
 Exponents, 124  
 Express Backspace, 28  
 Extension, 162

## F

File  
     Framing, 159-161  
     Spreadsheet, 147-151  
     Word Processing, 108-111  
 File name, 106  
 File name extensions, 162  
 Floppy disks, 17-19, 166  
 Footer, 73, 74, 100  
 Foreign languages, 41, 81  
 Format change symbol, 63, 82  
 Format marks, 120  
 Formatting a disk, 18  
 Formatting text  
     Typewriter, 34-37  
     Word Processing, 63-77  
 Format of numeric data, 122  
 Formulas, 124-128  
 Fractional Backspace, 28  
 Framing, 156-161  
 Freezing columns, 141  
 Function keys, 9  
 Function menus, 20, 178-180  
 Functions, 174-177  
 Functions, Spreadsheet, 128-132

## G

Glossary, 182-187  
 GOTO, 54

Grammar check  
     Typewriter, 42, 43  
     Word Processing, 83-95  
 Greek characters, 38, 81  
 Green keyboard markings, 9

## H

Header, 73, 100  
 Help, 21, 47, 114  
 Hot zone  
     Typewriter, 25  
     Word Processing, 50  
 Hyphen, 26, 70

## I

Indenting  
     Typewriter, 35  
     Word Processing, 66  
 INDEX Screen  
     Disk utilities, 162  
     Framing, 157  
     Spreadsheet, 115  
     Word Processing, 48  
 Indicators, 25, 49, 171  
 Initializing new disks, 18  
 Input Area, 117  
 Input/Edit Mode (Spreadsheet), 114  
 Input/Edit Screen  
     Spreadsheet, 116  
     Word Processing, 48  
 Inserting columns  
     Spreadsheet, 139  
 Inserting a floppy disk, 17  
 Insert Mode, 54  
 Inserting paper, 12  
 Inserting rows, 139  
 Inserting text, 54  
 Interferences, 4  
     *See also "FCC NOTICE" inside front cover*  
 International keyboard, 7, 38, 81, 166

## J

Justifying text  
     Typewriter, 26  
     Word Processing, 70

## K

Keyboard, 5, 6, 11, 168, 169-170  
 Keyboard control keys, 8



Keyboard setting, 7, 38, 81, 169

## L

Label

Spreadsheet, 120

Line-by-Line (L/L) Mode, 24-26

Line Indent, 35, 66

Line Out, 32, 55

Lines, drawing, 158

Line ending, 24, 45, 47

Line spacing

Typewriter, 30

Word Processing, 69

Loading a file

Framing, 159

Spreadsheet, 147

User Dictionary, 90

Word Processing, 107

## M

Magnets, 19

MAIN MENU, 20

Malfunction, 165-167

Manual correction, 31

Manual Return, 24

Margins

Typewriter, 26

Word Processing, 63, 71

Mathematical Symbols, 38, 81, 170

Memory, 22, 56, 87, 115

Menus, 20

Message, Preface, 50, 165

Micron, 29, 71

Moving a block, 57

Moving a range, 135

Moving around a spreadsheet, 118

Moving through a document, 52-54

Multiplication, 124

## N

New floppy disks, 18

Normal backspace, 28

Number of copies, 100

Numeric data, 121-124

## O

Operand, 125

Operator, 124

Order of calculation, 127

Overheating, 4

Overwrite Mode, 54

## P

Packing List, 10

Page break, 45, 71

Page, ending, 100

Page layout, 71

Page Layout View, 75

Page number, 74

Page Printing, 99

Paper, inserting, 12, 24

Paragraph Indent, 35, 66

Parentheses, 125

Part names, 5

Pause for KB Change, 100

Pausing/resuming printing, 101

Permanent backspace, 41, 82

Permanent hyphen, 70

Permanent space, 50

Pica, 29, 71

Pitch, 29, 71, 82, 100

Platen, 12

Plus sign, Preface, 8, 47

Positioning test, 71

Power cord, 4, 11

Power failure, 4

Power switch, 11

Precautions, 4

Previewing a frame, 159

Previewing text, 75

Primary key, 143

Printer, 103, 168

Printing a document, 99-104

Printing a file

Framing, 160

Spreadsheet, 152

Word Processing, 99-104

Printing a frame, 160

Printing a page, 99

Printing a range, 153

Printing, double columns, 100, 102, 103

Print menu, 100

Printing part of a spreadsheet, 153

Problems, 165-167

Protective cover, 5, 10

Punctuation, checking, 91-93

## R

Range, Spreadsheet, 129

clearing, 137

converting, 150

copying, 134

- moving, 135
- printing, 153
- sorting, 142
- Recalculation, 128
- Redundancy Check, 84
- Relative address, 133
- Releasing columns, 141
- Removing a floppy disk, 17
- Retrieving a file
  - Framing, 159
  - Spreadsheet, 147
  - Word Processing, 107
- Revising text, 52-62
- Ribbon, 13
- Right Margin Flush
  - Typewriter, 37
  - Word Processing, 67
- Row
  - deleting, 138
  - inserting, 139

## S

- Saving a file
  - Framing, 159
  - Spreadsheet, 147
  - Word Processing, 105, 106
- Scale, 49, 74
- Screen Symbols, 171
- Scrolling, 53
- Search, 59-62
- Search and Replace, 60
- Secondary key, 143
- Select, 144
- Setting margins
  - Typewriter, 29
  - Word Processing, 63
- Setting tabs
  - Typewriter, 34
  - Word Processing, 64-66
- SHIFT key, 8, 27
- SHIFT LOCK key, 8, 27, 47
- Short cut, 9, 174-180
- Soft hyphen, 70
- Soft space, 50
- Sort, 142-145
- Sort & Select, 145
- Space, 50
- Space between columns, 100, 102
- Specifications, 168
- Spell Checker
  - Typewriter, 42
  - Word Processing, 83-87
- Splitting the screen, 76

- Spreadsheet, 112-155
  - calculation, 127, 128
  - data, 120-124
  - file, 147-151
  - formulas, definition, 124
  - functions, 128-132
  - Input/Edit screen, 116
  - templates, 154
  - (See also names of Spreadsheet functions)*
- Standard keyboard, 7, 38, 81, 169
- Status Line
  - Typewriter, 25
  - Word Processing, 49
- Status Line Indicators, 25, 49, 172
- Stop symbol, 99
- Submenus, 20
- Subscript
  - Typewriter, 41
  - Word Processing, 80
- Superimposed Characters
  - Typewriter, 41
  - Word Processing, 82
- Superscript
  - Typewriter, 41
  - Word Processing, 80
- Switching on and off, 4, 99
- Switching between TW and WP Modes, 24, 48
- Symbol keyboard, 41, 46, 81, 170
- Symbols, 41, 81
- Symbols, screen, 171
- Synonyms, 43, 95-98

## T

- Tabs
  - Typewriter, 34
  - Word Processing, 64-66
- Television interference, 4
- Templates, 154
- Temporary file, 58, 59
- Text
  - Deleting, 54
  - Editing, 52-62
  - Entering, 48
  - Formatting, 63-77
  - Inserting, 54
  - Moving, 57
  - Searching for, 59-62
- Text Area, 49, 72
- Thesaurus
  - Typewriter, 43
  - Word Processing, 95-98
- Thunderstorms, 4

- Top cover, 5, 10
- Top margin, 72
- Troubleshooting, 166
- Turning on, 11
- Tutorial, 2
- TYPE Mode, 24-26
- Type Thesaurus, 97
- Typewriter (TW), 23-43
  - (*See also names of Typewriter functions*)
- Typing
  - Typewriter, 25, 26
  - Word Processing, 50

## U

- Underline
  - Spreadsheet, 146
  - Typewriter, 39
  - Word Processing, 79
- Unpacking, 10
- Uppercase characters, 8, 27, 47
- User Dictionary, 87-91

## V

- Voltage, 168

## W

- Weight, 168
- Width of columns
  - Spreadsheet, 140
- Word Count, 94
- Word Processing documents
  - creating, 50
  - editing, 52-62
  - formatting, 63-77
  - printing, 99-104
  - retrieving, 107
  - saving, 105, 106
- Word Processing (WP), 44-111
  - files, 108-111
  - INDEX screen, 48
  - Input/Edit screen, 48
  - keys used in, 47
  - screen symbols, 49
  - Status Line, 49
  - Tools, 83-98
    - (*See also names of Word Processing functions*)
- WP INDEX Screen, 48
- Write-protecting disks, 19



# Accessory Order Form

---

## Dear Customer:

Please use this order form when ordering accessories for your Word processor.

Please add \$3.00 for shipping and handling charges. For orders to be shipped outside of the Continental U.S., please add \$10.00 for shipping and handling.

## Starter kit

Item No.	Item	Price	Quantity	Total
SK-100	3 Correctable Film Ribbons 1 Script 1012 Daisy Wheel 1 Lift-off Correction Tape	\$41.95		
SK-150	3 Correctable Film Ribbons 2 3.5" Floppy Disks 2 Lift-off Correction Tapes	\$41.95		

## Cassette ribbons/correction tapes

Item No.	Item	Price	Quantity	Total
1030	Correctable Film Ribbon	\$ 6.50		
1230	Correctable Film Ribbon (2 pack)	\$11.50		
1032	Nylon Ribbon	\$ 7.50		
1031	Multi-strike Ribbon	\$11.50		
3010	Lift-Off Correction Tape (2pcs.)	\$ 6.50		
4010	Cover up Correction Tape (2pcs.)	\$10.50		

## Cassette daisy wheels

Item No.	Item	Type Pitch	Price	Quantity	Total
M401	Pica 10 (Standard Pica)	10	\$26.50		
M402	Prestige 1012	10, 12	\$26.50		
M403	Elite 12 (Standard Elite)	12	\$26.50		
M405	Script 1012	10, 12	\$26.50		
M408	Grande 10	10	\$26.50		
M409	Quadro 1012	10, 12	\$26.50		
M410	Quadro 15	15	\$26.50		
M411	Brougham 10	10	\$26.50		
M412	Brougham 12	12	\$26.50		
M413	Brougham 15	15	\$26.50		
M414	Prestige Italic 1012	10, 12	\$26.50		
M415	OCR-B 10	10	\$26.50		
M416	OCR-A 10	10	\$26.50		
M417	Letter Gothic 12	12	\$26.50		
M461	Brougham 10 (International)	10	\$26.50		
M452	Prestige 1012 (International)	10, 12	\$26.50		
M460	Quadro 15 (International)	15	\$26.50		

## Floppy disks

Item No.	Item	Price	Quantity	Total
BL-2	Business Letter Template Disk	\$49.95		
THR-2	Thesaurus Disk	\$59.95		
MFD-60	A Box of Ten 3.5" 2DD Floppy Disks Floppy	\$26.50		

\* Above pricing subject to change without notice.

To place an order, you may call our automated telephone system at 1-800-284-HELP. If you need to talk to a customer service rep for assistance, call (901) 373-6256.

# SHIPPING LABEL

Brother International Corporation  
 Typewriter Division  
 P.O.Box 341332  
 Bartlett, Tennessee 38184-1332

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY,STATE,ZIP \_\_\_\_\_

# Sub Total

CA,GA,IL,NJ,NY,LA,SC,VA,TX,TN,  
 NC,NM and MA residents add  
 applicable sales tax \_\_\_\_\_

Total \_\_\_\_\_

Add \$3.00 for shipping and handling

Method of payment (check one)

☐ Check or Money Order enclosed

Please charge my ☐ Master card

☐ Visa.

Account Number

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Expiration Date \_\_\_\_\_

Signature \_\_\_\_\_

# SHIPPING LABEL

Brother International Corporation  
 Typewriter Division  
 P.O.Box 341332  
 Bartlett, Tennessee 38184-1332

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY,STATE,ZIP \_\_\_\_\_

# Sub Total

CA,GA,IL,NJ,NY,LA,SC,VA,TX,TN,  
 NC,NM and MA residents add  
 applicable sales tax \_\_\_\_\_

Total \_\_\_\_\_

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Expiration Date \_\_\_\_\_

Signature \_\_\_\_\_





# Accessory Order Form

## Dear Customer:

Please use this order form when ordering accessories for your Word processor.

Please add \$3.00 for shipping and handling charges. For orders to be shipped outside of the Continental U.S., please add \$10.00 for shipping and handling.

## Starter kit

Item No.	Item	Price	Quantity	Total
SK-100	3 Correctable Film Ribbons 1 Script 1012 Daisy Wheel 1 Lift-off Correction Tape	\$41.95		
SK-150	3 Correctable Film Ribbons 2 3.5" Floppy Disks 2 Lift-off Correction Tapes	\$41.95		

## Cassette ribbons/correction tapes

Item No.	Item	Price	Quantity	Total
1030	Correctable Film Ribbon	\$ 6.50		
1230	Correctable Film Ribbon (2 pack)	\$11.50		
1032	Nylon Ribbon	\$ 7.50		
1031	Multi-strike Ribbon	\$11.50		
3010	Lift-Off Correction Tape (2pcs.)	\$ 6.50		
4010	Cover up Correction Tape (2pcs.)	\$10.50		

## Cassette daisy wheels

Item No.	Item	Type Pitch	Price	Quantity	Total
M401	Pica 10 (Standard Pica)	10	\$26.50		
M402	Prestige 1012	10, 12	\$26.50		
M403	Elite 12 (Standard Elite)	12	\$26.50		
M405	Script 1012	10, 12	\$26.50		
M408	Grande 10	10	\$26.50		
M409	Quadro 1012	10, 12	\$26.50		
M410	Quadro 15	15	\$26.50		
M411	Brougham 10	10	\$26.50		
M412	Brougham 12	12	\$26.50		
M413	Brougham 15	15	\$26.50		
M414	Prestige Italic 1012	10, 12	\$26.50		
M415	OCR-B 10	10	\$26.50		
M416	OCR-A 10	10	\$26.50		
M417	Letter Gothic 12	12	\$26.50		
M461	Brougham 10 (International)	10	\$26.50		
M452	Prestige 1012 (International)	10, 12	\$26.50		
M460	Quadro 15 (International)	15	\$26.50		

## Floppy disks

Item No.	Item	Price	Quantity	Total
BL-2	Business Letter Template Disk	\$49.95		
THR-2	Thesaurus Disk	\$59.95		
MFD-60	A Box of Ten 3.5" 2DD Floppy Disks	\$26.50		

\* Above pricing subject to change without notice.

To place an order, you may call our automated telephone system at 1-800-284-HELP. If you need to talk to a customer service rep for assistance, call (901) 373-6256.

Brother International Corporation  
Typewriter Division  
P.O.Box 341332  
Bartlett, Tennessee 38184-1332

Sub Total

CA,GA,IL,NJ,NY,LA,SC,VA,TX,TN,  
NC,NM and MA residents add  
applicable sales tax \_\_\_\_\_

Total

Add \$3.00 for shipping and handling

Method of payment (check one)

☐ Check or Money Order enclosed

Please charge my ☐ Master card

☐ Visa.

Account Number

[illegible]

Expiration Date \_\_\_\_\_

Signature \_\_\_\_\_

Brother International Corporation  
Typewriter Division  
P.O.Box 341332  
Bartlett, Tennessee 38184-1332

Sub Total

CA,GA,IL,NJ,NY,LA,SC,VA,TX,TN,  
NC,NM and MA residents add  
applicable sales tax

Total

**Add \$3.00 for shipping and handling**

Method of payment (check one)

☐ Check or Money Order enclosed

Please charge my ☐ Master card

☐ Visa.

Account Number

[illegible]

Expiration Date \_\_\_\_\_

Signature \_\_\_\_\_



## List of Factory Authorized Service Depots

In case of a problem with your Brother machine, please contact the Service Depots in your area listed below.

### **ABM Office Outfitters**

6803 Staples Mill Road  
Richmond, VA 23228  
(804)266-4488

### **Accord Office Machines**

4362 N. Milwaukee Avenue  
Chicago, IL 60641  
(312)777-8744

### **Adder & Typewriter Exchange**

133 South Broadway  
Baltimore, MD 21231  
(301)732-1717

### **Alabama Typewriter**

2203 6th Avenue South  
Birmingham, AL 35233  
(205)322-8691

### **APD Business Machines**

3514 Adams Avenue  
San Diego, CA 92116  
(619)282-6226

### **MTC Office Machine Co.**

1540 Union Street  
San Francisco, CA 94123  
(415)775-9250

### **OMNI Technical Services**

23182 Alcalde Drive, Suite G  
Laguna Hills, CA 92653  
(714)768-6627

### **Star Office Machines**

11353 Santa Monica Blvd.  
Los Angeles, CA 90025  
(213)477-6091

### **Arkansas Office Equipment**

1900 Jenny Lind  
Fort Smith, AR 72901  
(501)782-5612

### **Arlington Business Equipment**

5837 Commerce Street  
Jacksonville, FL 32211  
(904)743-3252

### **A-1 Ideal Business Machines**

3672 Coral Way  
Miami, FL 33145  
(305)448-5867

### **A&B Beacon Business Machines**

25-25 Borden Avenue  
Long Island City, NY 11101  
(718)786-0400

### **Bell/General Office Equipment**

9978 West 87th "Sante Fe Drive"  
Overland Park, KS 66212  
(913)341-7772

### **Buckhead Office Machines**

3164 Peachtree Road N.E.  
Atlanta, GA 30305  
(404)237-0400

### **Charlotte Portable Typewriters**

814 Central Avenue  
P.O. Box 30634  
Charlotte, NC 28204  
(704)375-4922

### **Cleveland Typewriter & Computer**

1955 Lee Road  
Cleveland, OH 44118  
(216)371-2500

**Connell's Office Equipment, Inc.**

708 5, 38TH  
Tacoma, WA 98409  
(206) 472-9645

**Craig's Office Machines**

555-C Wyoming Avenue  
Albuquerque, NM 87123  
(505)262-1958

**Dossman's Office Machines**

4119 Mt. View Drive  
Anchorage, AK 99504  
(907)274-5315

**Factory Electronics**

2422 Paulumbo Drive  
Lexington, KY 40509  
(606)269-7341

**Gittins Typewriter**

2926 Chicago Avenue  
Minneapolis, MN 55407  
(612)822-8277

**Lester Zisserman Office Machines**

70 Jamesway  
Southampton, PA 18966  
(215)357-4487

**Lewan & Associates**

6300 East Evans  
Denver, CO 80222  
(303)759-9633

**Mahr Business Equipment**

2746 West Camelback Road  
Phoenix, AZ 85017  
(602)242-6035

**Mecham's Typewriter Repair**

1753 South 7th East  
Salt Lake City, UT 84105  
(801)466-1209

**Mobile Office Machines**

2223 South Brentwood Blvd.  
ST. Louis, MO 63144  
(314)968-4322

**Modern Business Machines**

4609 Fairfield Street  
Metairie, LA 70006  
(504)885-5961

**Nashville Business Equipment**

1814 Church Street  
Nashville, TN 37203  
(615)329-2011

**Nevill Business Machine Company**

2707 Royal Lane  
Dallas, TX 75229  
(214)243-5285

**North's Office Machines**

2101 K Street N.W.  
Washington, DC 30037  
(202)466-2000

**REM Hawaii Office Products**

645 Halekauwila Street  
Honolulu, HI 96813  
(808)537-9575

**Richard's Business Machines**

10509 Aurora Avenue North  
Seattle, WA 98133  
(206)362-7078

**Robbins Business Machines**

3069 Fort Street  
Lincoln Park, MI 48146  
(313)386-5080

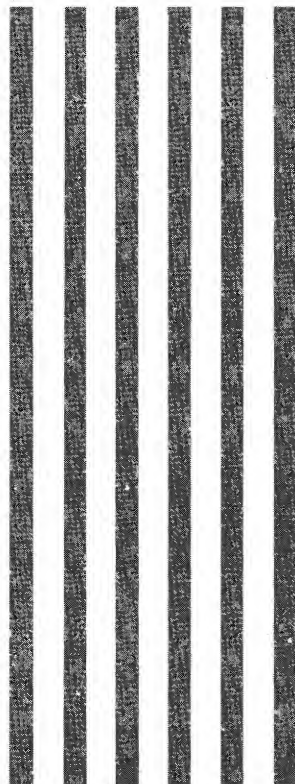
**TAC Inc, Office Products**

2605 East Flamingo  
Las Vegas, NV 89121  
(702)737-1949

If you cannot find a local service center, please call 1-800-284-HELP to locate the authorized service center closest to you.



**brother**



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